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The Medical Works of Villalobos:

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THE MEDICAL WORKS

OF

FRANCISCO LOPEZ DE VILLALOBOS.

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AND this translation will by some be called impertinent, as out of the common course of study; but these shall give us small annoy for two chief reasons that we have; the first of which reasons being this: that those who do not know did ever look for consolation in detracting from those who know; and the second reason is the following: Where on earth is the sense, we would ask, of making much account of people who are so wholly good for nothing as to yield to the suggestions of envy?

VILLALOBOS, *Preface to the Amphytrion.*

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THE MEDICAL WORKS

OF

FRANCISCO LOPEZ DE VILLALOBOS,

THE CELEBRATED COURT PHYSICIAN OF SPAIN,

NOW FIRST TRANSLATED,

WITH COMMENTARY AND BIOGRAPHY.

BY

GEORGE GASKOIN,

K. Commander of the R. Military Order J. Christo of Portugal, and of the R. Order Isabella la Cattolica of Spain; Surgeon to the British Hospital for Diseases of the Skin; Fell. Roy. Med. Chir. Soc.; Corresponding Mem. Soc. Med. Sciences, Lisbon.

LONDON:
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MDCCCLXX.

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TO

Sr. D. BONIFACIO MONTEJO,

DOCTOR IN MEDICINE; SUB-INSPECTOR IN THE HEALTH DEPARTMENT OF THE ARMIES OF SPAIN.

Sir,

To no other person than yourself could this work be with any propriety dedicated, if you are pleased to accept so ordinary an expression of my thanks and goodwill. The many occasions on which I have had to refer myself to you as singly informed in matters that are essential to it; the relief you have afforded me from many perplexities arising out of the subject matter, with a gratuitous and generous assiduity, makes that which is best in the work to be yours, while the faults and imperfections lie wholly at my door. I seem, indeed, to have been but as the wick to which you have furnished the due nourishment. Happy if in some things I shed a light more ample than you anticipated, or if I have added some things in relevancy that are not superfluous to the subject. If any merit I may claim as my own, it is that early I have seen and appreciated the truth that there are questions of much weight in medicine which only can be resolved by the Spaniards, or by assistance derived from them. This expression of

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mine, on a previous occasion, you were pleased to approve, and I am happy to repeat it now. The amount of toil I have bestowed on this work, which I confess to have been considerable, I have certainly found well repaid by the information which directly or incidentally I have gained from it as a medical study. I hope also to have benefited in some degree by the example of that scrupulousness, that conscientious and truthful accuracy which is found in all your writings, so little in accordance with the habits of our day, so poorly maintained in our modern literature. My predominant feeling, I confess, in sending these pages to the press, is the hope that they may meet your approval, feeling sure that if they conciliate a judge so strict and specially informed, I shall certainly have deserved some credit however denied to me elsewhere.

I remain,

SIR,

With great respect,

Your obedient servant,

THE AUTHOR.

LONDON, 1870.

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INTRODUCTION.

BIBLIOGRAPHICAL.

In the autumn of the year 1867, being led by subjects of professional inquiry to the library of the British Museum, while turning over the pages of the catalogue, I came quite inadvertently on the work of Francisco Lopez de Villalobos, 'The Summary of Medicine, with a Treatise on the pestiferous Bubas.' I made the observation with surprise as I had learnt previously that there were only two copies in Spain, one of them being contained in the national library at Madrid, while the other is in possession of General Sr. D. Eduardo Fernandez de San Roman. I had earlier drawn attention to the merits of this author, as syphilographer, in some short papers I had been encouraged to write in the summer of the year 1865, which had for their principal subject the derivation of syphilis from America. Having entrusted these papers to what I thought were influential hands, I saw nothing of them until two years after; whether from the artificial condition of medical literature in our epoch, which admits of nothing but what is clinical and of quasi original character, or from the little interest supposed by editors to attach to a subject long since under debate, it was only through the kindness of the editor of the *Medical Times and Gazette* that

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they found their way into print in the summer of the year 1867 with no alteration of the text beyond a revisal of the proofs. They will be found in Vol. II, 1867, under the dates July 20, July 27, August 3, August 24, of that publication. Though far too compressed and succinct to do entire justice to the subject, there is little or nothing in them that I would now desire to recall. These papers of mine have been quite recently subjected to a very rough criticism on the part of a Prussian physician who is not otherwise known to me, and this has been the cause, however inadequate, of hurrying me into the present publication.

Not only for the idea, but also in chief part for the material of these papers, I was indebted to the knowledge I had of a publication then taking place in Madrid, in the library of the *Pabellon Medico*. For thus is expressed in that city the connection which subsists between a periodical and the *feuilleton*, or separate flying sheet which not unfrequently accompanies each issue, and which helps to form a volume at the end of the year. In the present instance the work or essay had for its title, '*La sifilis y las enfermedades que se han confundido con ella*,' from the pen of Dr. Bonifacio Montejo. Its publication commenced in the year 1863, but it has suffered many interruptions, nor is it yet finished, though it promises a speedy completion. It is a work of great merit, labour, and research. Not a few of its data and arguments have been crucially tested by me, and found to be exactly correct. In this essay there is a chapter devoted to the poem on the bubas, which forms a supplement to the '*sumario*,' the work which at present is under our review.

At the time of my making the observation aforesaid, in the library of the British Museum, I was too much

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engaged with other matters to pay much attention to it. It was not, I believe, till the following year that I made acquaintance with the text, nor was it till the autumn of that year that it became the object of my study. By this time I had made many extracts from the gothic letter which were chiefly from the section on the bubas. Without understanding at first the full scope and bearing of the thing, I could not but be struck with the conciseness, the precision, and lucidity of the language employed, the neatness and felicity of expression which seemed to reign throughout; a certain copiousness of detail was observable in parts, and everywhere was freshness, and thoroughness, and ability. The very idea of this 'sumario' being a compendium of Avicenna had a touch of humour in it when we compare its twenty-eight leaves with the cumbrous volumes of Gentilis and other laborious commentators —yet here we find the science of the Arabs, and medical doctrines of the period, displayed in simple words, the same enlivened by Cervantes-like wit and the grace and healthfulness of natural expression. Very early I was led into an imitation of the poet's manner, which has, indeed, a peculiar charm. As for versifying, I was a total stranger to it. I dreamt not then, nor do I now, that I have any faculty in that line. I am, indeed, fully persuaded of the contrary, but a touch of humanity runs through us all, and in my case the saying was made good which his most recent eulogist has brought to remembrance,

Di medico, poeta y loco
Todos tenemos un poco;

and perhaps I am not sorry to turn the tables on some of the literary class who are perverse dabblers in medicine.

Nothing, I conceive, would be more likely to betray

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in translating an author like Villalobos, than a poetic or literary faculty far in advance of medical experience; only a doctor could do the work well: far above all qualifications for task is an acquaintance with the subject matter; but beyond this there are, I confess, other difficulties of a literary and linguistic character enough to send a man crazy, and that twenty times a day, arising out of the early period at which the poem was written, when idiom, orthography, and punctuation were wholly unsettled and capricious. I had already before undertaking this task, some small acquaintance with the early syphilographers, and I set the higher value on this writer from their facts and assertions being not invariably correct; on the contrary those of Villalobos wear always the stamp of truth. Among them he stands pre-eminent by whatever rule we judge them, whether it be of letters or physic. The exaggeration and passion of Van Hütten have here no place; the elegant poetastry of Fracastorius, who had so much rather seem a literate than a physician, is here put plainly to rebuke, contrasting as it does very strongly, and I presume to say disadvantageously, with the close doctrines and nice precepts of this staid young Spanish physician, full of practical hints and of sly and ingenious wit, wherein we really fail to see whether art or nature has the upper hand, so happily are they blended and balanced in the treatment of the matter before him; his episodes are fully as didactic as his story; every article is *ad rem;* for acquaintance with his subject, and for power in expressing the fruits of his observation, Villalobos is truly incomparable; in this he has the poet's gift, in this only Ricord can compare with him and Hunter on a lower form, he leaves all others far behind; but I need say the less on this score, since in the spring of the year 1868, at

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commencement of the scientific course of the Royal Academy of Madrid, Dr. D. Eusebio Castelo Serra, *academico de numero* of the said academy, and dean of *San Juan de Dios* (venereal hospital), selected for the subject of the inaugural discourse, to be that year pronounced by him, a comparison of Villalobos, poet and syphilographer, with the celebrated Fracastorius, and also with a modern poet of minor fame and excellence, M. de Barthelemy. For the words and substance of this discourse, in every respect worthy of the august occasion, the reader is referred to the pages of the '*Siglo Medico*' of that time and period, of which celebrated periodical D. E. Castelo Serra is the very talented editor, and in the pages of the '*Pabellon Medico*,' the organ of the Medico-Chirurgical Academy of Madrid, at much the same date and epoch will be found an able and no less elegant criticism on the same discourse from the hand of Dr. B. Montejo, to whom the medical public and also D. Castelo Serra are principally indebted for suggestion in this line of inquiry and for originality of material in connection with the subject: by his labours, indeed, many of the works of Villalobos have been rescued from neglect and probably also from destruction; no less by Dr. Montejo have certain details of his personal history been unfolded, which by previous writers were distorted from the truth, and some which had never been inquired into were also brought into view by his particular exertions. Until recently, indeed, there was little known of Villalobos in Spain, a fact the more singular since he was always deemed a classical author, and one who had a very great share in the formation of the modern language. As a writer, indeed, his merit has never been disputed; many of his works are bound up in the collection of Aribau, '*Biblioteca di autores españoles*,' Madrid, 1855, which in-

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cludes the classic writers of the early and later periods of the Spanish literature.

Enough, I hope, has been said, to serve as an excuse for the introduction of the present work to the notice of the medical public. It is true that we have here only a translation, but it is one which in the interests of medicine has been painfully and laboriously made. We must consider that in respect to science, our nation really counts among the younger and more recent, at the time this poem was written it had neither literature nor science. As regards my qualifications for the task, I confess that my acquaintance with the '*Sumario*' is very far from being complete, I have not yet spared time for this object, and having been engaged from my early youth in active life, I confess myself much behindhand in many questions of that age, I am chiefly indebted to Italian writers for what I have learnt on these subjects; among these I may mention the excellent commentaries of Landino and Vellutello on the text of Dante, of which I am the fortunate possessor, both of them men well versed in physiology, and besides so thoroughly conversant in all the cosmographical science of the day, that they can tell you within a foot's pace the distance from the first to the eighth or any other celestial sphere, and to any question proposed they never seem to want a reply; I have also derived much instruction from the lectures of Benedetto Varchi, before the Lyncean academy at Florence in 1543, the same date at which the "Problemas" were published; a year in many respects most remarkable in the annals of science; this author, if I presume right, is more learned than Villalobos, though inferior to him in clearness of expression. It is a book which with very great advantage might be translated into our mother tongue.

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During the study preparatory to this publication, I have daily experienced all those interruptions and distastes which are incident to professional existence; what I have treasured in the beginning of the week, before the end has been misplaced and lost; what I knew about these subjects in the beginning of the year, before the end, has been clean forgotten; so that in fact I have stored away in papers and notes a much larger material than I can make available for this occasion. I am conscious of the great uncertainty that attends the issue of the work at the present moment. Such a venture must always be the result of individual impulse; no one, in this country at least, has in any degree encouraged it. If the work should meet with any favour, my fondest anticipation is that it should serve the student as a substitute for the whole collection of Luisini, so often quoted, so seldom read, and which from the tight system to which he is now subjected must for the most part remain to him a closed book. I have also thought that a taste of ancient medicine, and old world philosophy, may be of advantage to him; the age is really apt to be too mechanical and there is no great plenty of books in our literature that can assist him to this supplemental but also useful and decorous branch of knowledge; in the present day his pride is too much fed by a display of scorn at the imbecility of the old physicians, whereas in point of mental power they were certainly not inferior, and their prophetic sense of recent discoveries may deservedly challenge our highest admiration.

As regards my professional conscience, it is wholly and quite at ease; nothing safer than my own experience can serve me as a guide in this. The present age is one which is profoundly discouraging to intellectual endeavour, as it is intolerant of intellectual independence. In this

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sense the thing gets worse from day to day. We are crushed under the weight of contemporary reputations. That I may not be thought without any countenance in entertaining such ideas I will palliate my opinion by quoting the last number of the '*EdinburghReview*,' p. 195, January, 1870, for those who stand without seem better judges than those who are at work inside. Speaking of Sir William Hamilton, the talented writer says that it seems to have been his mission to war against special schools in literature and in science: he stigmatises "the weakness of the human intellect that rushes into extremes of fashion as capriciously and absolutely as the leaders of the gay world follow the shiftings of fashionable costume." Protesting against "the shifting despotism of this kind of vogue, Hamilton found it in a more serious shape than it took in literature when he turned to science and philosophy. For example, he was keenly sensible of this peculiar defect in the profession to which he first desired to attach himself—medicine. The student acquires the belief that it is a folly and a scandal to look from existing leaders in practice and opinion into the past; and the mind is thus narrowed by the submissive adoption of the absolute dictates of the leading teachers of the day."

The volume in the British Museum, to which reference has been made, is entered Vol. 127 of the letter L. It stand thus:—C. 34, m. "Lopez de Villalobos, (Francisco) *El sumario de la medecina, con un tratado sobre las pestiferas buuas.*" (Founded on the rules of Avicenna. In verse). End:—"*Fenesce el Sumario de la medecina hecho por el licẽciado frãcisco lopez d'villalobos emẽdado y corregido por el mismo. Deo gracias. G. L. Antonio de barreda. Salamanca*, 1498, *fol.* Note.—28 leaves without pagination or catch words, printed in double columns, 48 lines to a

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full column. Register, *a* and *d* in eights, *b* and *c* in sixes."

The work is a small folio bound in red morocco, with a neat and sober elegance: the binding of no ancient date. It is cared for in the library as a thing of rarity and price, and the entry in the catalogue shows the work of a cunning hand. The text is in gothic letter of great distinctness and beauty, the paper, in the early period of printing so difficult to obtain, made perchance from the flax of Valencia and Murcia, appears uncommonly good. The work is in fine preservation. After a blank leaf belonging to the binding in the middle of the first page, or rather face of the first leaf, there is simply the general title in rather large type as above, *El sumario de la medecina, con un tratado sobre las pestiferas buuas.* On the reverse or back or the leaf at the top, commences the prohemium or Latin preface, with a very elegant Arabic letter C containing thistles. On the face of the leaf following the Latin preface comes to an end, from whence the text is continued on in Spanish prose with this heading:—"The summary of medicine in *romance trovado*, by the licentiate de Villalobos, student in the school (*estudio*) of Salamanca, made for the contemplation of the very magnificent and illustrious lord, the Marquis of Astorga, second of that name, to whom he says." He now introduces the summary by some lines in Castilian, giving his reasons for the task, the matter he intends to treat of, the advantages that should accrue from it to literature, no less than to men engaged in science. The *romance trovado*, it must be observed, is the spoken dialect of the country as opposed to the Latin or Roman. On the other side of the leaf is a heading in larger type, *Comiença la obra trovada.* The poem then begins, and so is continued on; divisions are

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marked in it by the prefix *Fen* as in the work of Avicenna, but such divisions, though varying much in point of distinctness, are none of them very strongly marked till we arrive at the face or front of the twenty-third leaf. Here a heading far bolder than the rest, and also in larger type, beginning with an initial letter half the size of that at the commencement of the work, introduces the subject of the bubas, called on the first leaf pestiferous; it is very well worthy of remark that they are here termed "contagious and accursed." The stanzas of the '*Sumario*,' as of its supplement, consist of ten lines each or double *quintillas* or *trovas*, each line carries eleven syllables; in the first *quintilla*, and generally in the second, the first, third, and fourth lines rhyme together, so also the second and fifth. For a few leaves at the commencement of the poem in the second *quintilla* the first rhymes with the fourth, and then the second, third, and fifth agree in rhyme, but afterwards more seldom; in the section on the bubas this very rarely occurs. To nearly every stanza there is a direction or epigraph, but no number is affixed. These headings not rarely supply information that is not otherwise supplied by the text. Seventy-one stanzas are devoted to the subject of the bubas, which by the seventy-first is brought to an end; after which come three stanzas more under the head of Finis, and then we find as follows:—*Here ends the summary of medicine made by the licentiate francisco d' villalobos amended and corrected by the same. Printed in the city of Salamanca at his expence by Antonio de barreda, bookseller, in the year of the birth of our Saviour one thousand cccc. &c. y. viii. Deo gracias.*

This book was purchased for the museum, as I am informed, on the 26th September, 1860, at the sale or at one of the sales of the celebrated bibliophilist, the Count

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Libri, and its description is said to be in part II of his catalogue, a fact which I have not verified. I remark that a great authority on such matters has just recently thus expressed himself in the public prints: "* * * * * must forgive me when I state that as a general rule I am an utter disbeliever in dates of literary and artistic rarities prior to the year 1500." I may here remark, *en passant*, that the first work printed in Spain came from the press in the year 1474. Its subject was, "the conception of the Virgin." The *sumario de la medecina* is therefore a very early and curious work; we shall not for the present offer the grounds of our conclusion, that there is but this one edition.

For mere convenience sake we shall prefer to speak of the rarity of the book before treating of its literary value and importance, and tell of what the author has achieved before we deal with his biography. I have said that only two printed copies of the *sumario* were known in Spain; since then a third has been discovered in the library of the ministerio del Fomento.

The copy in the national library of Madrid, faultily described by me in the 'Medical Times and Gazette' as being in the royal library, is bound in parchment with another work of the same epoch, entitled the *Compendium of human health.* I do not know how it was acquired by the library.

The copy in the hands of General D. Eduardo Fernandez de San Roman belonged to the collection of books in Toledo, which was the property of the well-known bibliophilist, D. Bartholomé José Gallardo; that which is found in the library of the ministerio del Fomento formed part of the collection which for many years was made in the Balearic islands, by the celebrated General Marques de la

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Romana, commander-in-chief of the army, which at the beginning of the present century was sent to the north of Europe by Spain, to gratify the first Napoleon.

The copy in the library of the *ministerio del Fomento* bears on its title-page the words, *El sumario de la medecina*, without the superaddition *con un tratado sobre las pestiferas buuas;* in all other points it agrees with that in the national library. "On various occasions," writes Dr. Montejo, in the correspondence I had with him on the subject, "I have heard of the book in other quarters, but scarcely had I commenced my investigation when I met too surely with disappointment. Living Spanish bibliophilists who have made with the greatest perseverance a regular collection of ancient works, whether rare or of acknowledged merit, do not possess a single copy of this particular work of Villalobos. It is wholly unknown in Salamanca; I searched thoroughly, but fruitlessly for it in Seville, carefully going through the libraries of the Archiepiscopal palace, and of the university and of the Columbina, which is the richest of all that is known in Spain in books of the fifteenth and first half of the sixteenth century. Moreover I have searched in Madrid, the libraries of Osuña, of Medina Çeli, of San Isidro, of Palacio, and of the Faculty of Medicine, and in none of them does there exist a single impression of the work. A friend of mine, professor in the faculty of medicine in Granada, has mentioned to me that there is a copy in that university, but without giving me such details as can convince me of the fact. You may assert, with small scruple or fear of contradiction, that only three copies of this work are now at present existing in Spain."

If we had to consider the date at which the *sumario* was written in relation to science and its revival, and the

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general aspect and civilisation of Europe at that particular period, there would be more requiring to be said than here we could find room to say. Let us briefly remind the reader that in the year of its publication, Charles VIII the French king died, close upon his tremendous raid into Italy; in this year Savonarola suffered, whether we regard him as martyr or fanatic, a cruel death in Florence by fire; five years, more or less, had gone by since Columbus returned from America with the first announcement of his discovery, and three or four years had elapsed since syphilis was notorious in Europe. At the date of the issue of the *sumario*, Henry VII sat on the English throne, Alexander Borgia wore the tiara, Villalobos was contemporary with our Linacre, being in age a few years younger. At this time, indeed, he was twenty-four or twenty-five years old, and still a student in the school of Salamanca, for as yet it was scarce a university, and he had only been received as licentiate; then it was that, urged thereunto by the repeated suggestion of his patron or territorial chief, who desired something of him more readable than the common run of medical books, he composed and printed this work within the precincts of that city. It appears that noblemen and gentlemen were not at that time indifferent to the progress of natural science; they had even some smattering of its elements. We have somewhere read of four courses of a feast designed after pattern of the four humours. To a reader but little conversant with the abbreviations that were current in literature at this very early period, and which have been evermore common, perhaps, in foreign than in English publications, the Latin preface to the *sumario* will appear rather crabbed and disgusting; he will here find printed aial for animal, lo q lle for loquelæ, spu for spiritum, and so on. This may serve

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to give an idea of the difficulties which have been incurred in the transcripts made for this work, some of which have been fatal to our inexperience. In this preface Aristotle is quoted in certain books of his, as well as Hypo and Hali and *summus conciliator*, who is in fact *Petrus de Apono*. Villalobos sets out with a bold defence of medical science; he bids the reader mind how herbs and shrubs do bend the body to their sense, *quorum ad sensum qualitates corpus alterant;* how fire by its lightness ascends; how water by its weight is carried downward, the whole series of causes and effects: he cannot then fail to perceive the helplessness or dependence of men reduced to weakness by all sorts of vices: it is folly then to say that to each is his appointed hour; but of these casuists so deaf to reason, let them take a strong dose of Napellus, or cast themselves alive into flames; and then he goes on to say very deserved and handsome things of medicine; then he falls foul of the interlopers who with very little training or preparation snatch the bread out of the mouth of qualified physicians. "How is it that our art," he says, "has fallen into contempt; not only are there inept physicians and plenty of them, but mere scholars, presumptuous and intrusive, and over and above mere rascaldom. *In alii desperati mecanicis victa carentes se medicos expertissimos interiorumque corporum speculatores. inter vulgus fingentes. eodem medacaminis modo omnia curare promittunt nescientes miseri quod sanis corporibus. hiis quidem dulcia. illis vero amara conveniant. egri etiam quidam levius quidam vero acrius adjuvantur. non solum itaque in vituperium scientiæ et ejus canonice sequacium panem justorum rapiunt. immo vitas miseras innocentium credulorum. crudeliter occidunt. Heu quot miserandi vulgares hos propter similitudinem insequuntur qui sine aliorum potentia hujus penitentes facti aura celi vesci amplius*

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nequeunt; et tanquam improvida belve alieno stimulo tristi offerunt (se) morti. Quorum magna spes facinorum machina repentino atque insperato sæpe fine destruitur qui ab eis non morbi sui remedia suscipiunt. sed adhuc contumacis doloris fomenta quedam sunt."

Here, then, we have from the masterly hand of a contemporary the living image of those "who first fluxed for the French disease," the best effect of their treatment according to him was but merely some temporary alleviation, *sed ad huc contumacis doloris quedam fomenta sunt.* These are the men he afterwards speaks of as leather cutters, left-handed scoundrels, with nothing of straightforward dealing in them. And it is remarkable that from the existence of such he draws one argument for the publication of his work even that they may be deterred from such rash interference being made more keenly aware of the errors they commit, *Horum atrocem sceleratamque mentem mecum excogitans dixi. Si id ipsum quod eis licere creditur auferant. magna ex parte sceleratorum hominum pœna relevabitur. hujus atque aliquid compleri poterit. ipsis considerantibus nocumenta que suis medicaminibus cuicumque egro inferre possint. hujus vero noticiam adimplere nequeunt si vestigia aliqua medicine olfacere non urgeantur.* He therefore determines on the publication of this work *in lingua sibi nota perplacidaque verba decrevi*, that the conscience of these first may be reached and the bodies of their victims be protected, also that noble gentlemen may know more about medicine *ejus optata ejusque odiosa conspiciant videant etiam qualis mentis integritas medico insit.* The licentiate then recommends himself to the indulgence of the public; the honors of the professions are not his as yet *angiporta mihi pervia non existunt:* he is timid lest his latin should appear adulterate, he hopes at least not deficient in nerve,

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for the rest the marquis is his sponsor. Then there is an exquisite short address to all he deems holiest in religion, to Father, Son, and Holy Spirit, and to the Virgin, beautiful and blessed and serene, but of the saints no word. The Spanish preface follows, with a special direction to his patron. Villalobos says, that having had his attention turned by the marquis to the desirability of certain translations from the latin into *romance,* by cause of the advantage which might ensue to many physicians in his domain, men who lettered and expert as they were, might find much convenience from the use of such, since they could reduce what they knew more easily "into act," he had fallen into the reflection that by thus vulgarising science, some prejudice might follow.

"For it is known," he says, "that the greater part of our science consists of principles, such as the knowledge of the complexions, and the humours, and the members, and the functions, and anatomies, the knowledge of the potentiæ, the spirits, and operations, the description of ailments and their signs with the pulses and urines, and other many and important things which are only learnt in the schools with repeated practice and long painstaking, and how could a man know how to cure humoral fever who knows not what humour is and its species, and all the other things that are taught in science, which make great diversities and contrasts in the treatment, so much so that from difference of time, or the complexion being different, a complaint may require quite another class of treatment?" And this is his reason for not busying himself in those translations the marquis has recommended to him. He prefers to make this summary which should contain all ailments (*enfermedades*) universal and particular, just as Avicenna has laid them down. So any man

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with a fair knowledge of the *principia* may easily find out of his book the complaint, and the proper treatment, and simple and compound medicines, and learn to frame others on the model of those in the text: even supposing he has no other books, or with books that are in any way imperfect, he may also learn the terminology and names of the complaints with a little knowledge of Latin, and he may turn with less difficulty to the proper chapter in Avicenna and so find what this author says. Some of those young and even old physicians who have learnt rather by converse with the sick than by books, not having gone steadily and more than once through Avicenna and Galen may perceive in it a great advantage, for the signs to show the chapters exactly correspond to those in Avicenna, and, as said before, gentlemen and the literate of other faculties will find it entertaining; at a pinch it might supply the need of a physician. Now the poem begins, "It is to be the flower of medicine in light style," and first we have eight stanzas in a noble vein of poetry, wherein the marquis of Astorga is addressed, this noble and royal cavalier, for his connections are royal, this brave Osorio, who at the age of twelve years first put his armour on, and never returned without blood from foray or campaign. Only those who know not Spain have need to be told that there has been nothing there more conspicuous in the ranks of Spanish nobility than the title of Astorga; the stanzas of Villalobos leave one with the impression that the second marquis of that name was a rather remarkable person. We are concerned, however, with the medical, not with the aristocratic or military element. We shall therefore only give the fifth stanza, which serves to show the relation in which the poet stood to this nobleman.

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How many hidalgoes are bred in his house,
Who from father to son are all of them his,
And see the great splendour his income allows,
And then the great lineage whence he arose,
His honour and glory do reach to the skies.
And e'en the physicians, the feeling 'tis still
That they be of his house by succession and line;
To his my grandfather the function did fill,
And my father to his and the same doth fulfil
Near my lord, I may hope the next turn will be mine.

In the ninth stanza he invokes Esculapius and Hypocras, and Archigenes, then Galen, then Rhazes, then Avicenna, and now he gives himself fairly to the task, in thirteen stanzas he recounts the principles. First he gives you the definition of medicine, the very next stanza concerns complexion; in the next, we have its varieties, *igual es la mas singular*, equal is the most remarkable, the complexion *ad pondus* or well balanced temperament; next we have a stanza on the members of complexion; then one on the four humours; then follow two stanzas on the four humidities which may profit us by translation, as it will be useful afterwards in explaining the conjoint cause of the bubas.

The Four Humidities.

But ere ever that the blood to nourish us is brought,
It goes through certain changes in the four humidities,
And first it suffers change when seeking to pass out
From the very smallest veins therefrom to spread about
In the members one and all and the porosities.
The second change occurs when it becomes diffused,

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In the members as we said and there doth moisten them,
The third takes place as soon as it is introduced,
Within those tiny places where some share is lost,
And it serves to keep them thriving and repair the same.

He goes on and once more divides the humidities.

The fourth is what occurs when in any such place
It imbibes like the member and appropriates like it.
The meaning of it is to restore and replace
Whatever by the heat hath undergone decrease
And is wasted by the air and by uses infinite.
And sometimes they are healthy and are natural,
These same humidities of which we reason here.
Or damned and corrupt as sometimes will occur,
Through the many shifting changes in the animal
And also from the breathing of corrupted air.

The smallest class of veins, *venas chicas*, express very definitely the venous radicles or capillaries, the little tiny places (*lugarejos*) are not vacuities, but small organic substances, they answer exactly to the formed and formative matter of Beale: *lugarejo* is a little place or village in a common acceptation. It is well to carry in the mind that the word place (*lugar*) according as it is used in this work is a member or component part of a member, an organic portion of the frame. The pores or porosities are derived from old Greek medicine of the earliest period: quite recently they have been appealed to by Cohnheim, a German physiologist, in his microscopical investigations on the blood-vessels and the course of the blood in inflammation.

In the next stanza he defines the member, which is a certain body composed of humours for its consumption.

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And I judge that of these the most principal
Is the heart as the philosopher has said,
Next the brain from whence all the feelings are,
After which the liver in perfection doth succeed,
And next the secret parts by which we all are made,
With none of which four the others can compare.

We find here the heart in all the pre-eminence asserted for it by Aristotle, and which indeed it always had, even before Harvey's time. Next we read of the principal complexions and all the body, next of the potentiæ or virtues, then comes a stanza on the "spirit or natural heat."

Spirit and Natural Heat.

And of the selfsame virtues as their proper instrument,
Which also brings them in, there is spirit and heat;
By spirit a thin body and vapour here is meant,
Which in the left chamber of the heart is pent,
As the nobler and the better 'tis its chosen seat.
This it is that we find beating in the pulses and the veins,
This it is which makes us better for our drink and pro-
This it is which enables us to feel and to stir, [vender,
This it is which brings to us all the heat as 'twere in chains
For the uses of digestion in the members everywhere.

After this he defines ailment or infirmity, speaks of compound infirmity, "divides the malice of the complexion," when function is impaired it may be from hnmour or without it—*e. g.* inflamed brain may be simply from heat or with humour accompanying it; hence come apostema, pain, or accident. He gives the signs of hot and cold brain, of the moist and dry, of cold apostema of

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the brain, and its treatment in general. Those severe kinds of headache, *Soda* and *Emigrança*, have one stanza each; then come phrensy, lethargy, *congelatio* or catalepsy, *subeth-sahari* (a compound of phrensy and lethargy), "wakeful sleep," no true rest by night or day; then vigilia or sahari, faulty memory, ilisci or *mal de amores*, vertigo, incubus or nightmare, epilepsy, apoplexy; and so on. In the four hundred stanzas of the sumario, or nearly so, each complaint is discussed—each subject has a stanza appropriated to it, sometimes two.

Our space will not allow us to introduce several of these, we give a very ordinary one, that of cholera, which is on the front of the fourteenth leaf, Book III, Fen. XIV.

On Cholerica-passio.

Cholerica passio is when you have
By vomit and stool all the victuals expell'd,
Corruption and damage you plainly may perceive
In the digestive virtue and the retentive,
All power of nourishment has wholly failed;
Evacuate the humour that is offered to the sight
By the same path of vomiting until its next to nought,
And the virtue that is wrong endeavour to set right,
What is ordered for the flux will also do for it,
And at his greatest need you must give him some support.

But all of the stanzas have not this bald and formal character, though indeed he keeps himself quite strictly within the compass of Avicenna. On the fourth and fifth leaves there are eight stanzas devoted to the malady of love, *mal de amores*, "which Avicenna calls *ilisci*, and the Greeks *hereos*." A thing half illness, half madness, as Villalobos

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expresses it elsewhere. *According to our authors*, he says, amor hereos is a corrupt imagination, it is when a man is beside himself for love, "for this is the aim and purpose of the troubadour." I will tell you plainly what it is. Know for certain that the understanding does not mix itself in these troubles; the imagination and animal thought (*bestial pensamiento*) is huge *potentia;* it deceives itself and cozens all the other potentiæ. Such potentia it is which influences the other feelings so that they all drag in one direction; memory, desires, eyes, and ears are all converted and busied in this one thing.

Conquered by a face, this character of thought informs the other feelings that it is handsome, gracious, ornate, and honest: tells them where some hope is in reserve with regard to it, and in what way one should proceed and take up form to acquire it. And the understanding after there are entered in all these false witnesses, "for I can affirm," he says, "these judgments to be always false," it loses its force, it loses its reason, its counsel, its prudence; because one is blind all must go blind, for it is the thought and imagination which give to the heart this cursed unrest (*sossiego*), thrusting into it the most ardent flame, being ever stirred and provoked by desire.

In the next stanza he proceeds to the signs which appear when a man is enamoured. Such a one will be neglecting his business, loses his sleep and all appetite for meat and drink, he will have his sighings and petty humours and disgusts, he will cling to solitude with little fits of sorrow; nothing can please or profit him, his strength gone, his colour lost, if you talk to him of love he bursts out crying, his pulse is low and unequal, and it never rises beyond a certain pitch, except when he sees his lady. This description, it must be allowed, is some-

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what inferior to that of Avicenna, in the happy touches that author gives it in a more lengthened recital; some of these are replete with comic force, *motus continuus palpebrarum risibilis quasi aspiciat aliquid pulchrum delectabile et audiat rumorem jucundam aut letificatur*, and other good strokes and happy touches of the kind. In the treatment of the patient Villalobos is explicit. He must be torn away and alienated from this wretched and corrupt cast of thought; the plan of cure will be divided into ten heads, and will therein be found complete. 1st. He must hunt and sport continually. 2nd. He must go out fishing, but remark only where there are plenty of fish. 3rd. He must not be shy of the gaming table. 4th. Let him be always before the world. 5th. Let him go walk in the Prados. 6th. Let his friends and noble relations, wise and prudent men, set before him all the inconveniences and perils which must ensue from this indulgence of his carnalities. 7th. Make it a serious matter, give him harsh words and let him be well leathered if he will not hear reason. For the 8th let him seek introductions from some Lucio to other women of easy and obliging character. 9th. Or if not, get some aged frump (the *Vetula* of the classic world) to take up his cause and to get him a wife; for they understand the business very well. Or lastly: 10th. Let him have wine, both white and red, for his ordinary tipple; never yet was love, says our author, that good liquor could not drown.

In spite of such good and wholesome advice, such perfect etiology and approved means of cure, the ilisci went on for a long term in Spain at its full tide of strength, a trick of exaggeration which they had caught from the Arabs. So late as the end of the seventeenth century we read of this madness being held in favour about the court;

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a certain number of young gentlemen who had lost their wits for love and were supposed not to be "in their own keeping," were privileged in their words and actions for the commission of all sorts of folly. In his prologue to the Amphytrion, Villalobos treats at large the whole subject of this passion: in one of these chapters headed "How a lover is a madman fit for chains," the physiological doctrines of the age are strongly pronounced and there is altogether a flavour of Averroes in it which might make it a very proper appendix to this part of the summary.

On its sixteenth leaf we meet with the complaints of the genitals or members of generation and "first of the little appetite and faculty of these." In Avicenna also they occupy Fen. XX at the end of his third book. The study of these complaints as understood by the ancients will prove by no means an idle task, as many important questions are closed by a precise acquaintance with their text. We shall therefore take a brief survey of this division of the work.

There is no reason to confound and mix up this class of subject with the bubas any way, for that is a different thing altogether. Villalobos gives these complaints much as they are described by other hands, Celsus, Avicenna, and the rest, before the coming of the bubas. It is worthy of our attention that he says, "these parts are very principal and of great benefit, but of all their complaints impotence is the worst," out of nine stanzas he gives three to this head of subject. It is not always the blood and humours that are at fault in it, sometimes he thinks there is oppilation in the heart or brain, whence the virtue and appetite proceed, there may be also frigidity either in the part or in the blood, perhaps heat which spoils the ventosity or

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maybe some part of importance in the neighbourhood is ailing. For fault in the blood, and humours, you give bland nourishing food, and let the patient indulge in a snooze towards afternoon or evening.

If to coldness any way be owing this defect,
Mithridatum and theriaca bestow therein,
And the diasatyrion for this you will select.
But if from heat it comes you rather will direct,
The poppy seed, and better far dispersed in wine.
Hung beef, salt fish and eggs do rarely answer well,
They flatter but betray, however strong the will is,
Far better wine of Coca or Medina doth avail,
A partridge, a fat hen, some pigeon, dove or quail,
Or a sixteen-year old bright willing young Phillis.

The next stanza is on gomorrea or gonorrhœa, the next on priapismus, described in ancient nosology as a distinct disease; it will be remembered that syphilis was sometimes mentioned as a priapism; the next is on nocturnal loss, which is assimilated to gomorrea; the next is on pederastia, accounted to be rife in Italy, but little known in Spain; and now we come to apostema or imposthume of the genitals, connected with which is found a remark of some importance. The word abscess does not express in exact terms the term *apostema*, which may suppurate or not, it is an abnormal, more or less congestive swelling in its general acceptation; there is the hard and soft apostema, the aqueous and the flatulent *apostema*, all these are treated by Avicenna under different heads. In one stanza, that on mole of the uterus, he speaks of a raised hard imposthume (*apostema eminente duro*), but this term is not applied to the primary manifestation of the bubas. The Hunterian chancre is mentioned by

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Villalobos as a buba or a lesion, and neither is it an apostema nor an ulcer.

In the description of the apostema of the genitals, he says, we "know them now as we knew them before."

> Si viene apostema en los genitivos
> conosce se como los ante pasados.

This can only mean, we know them now as we knew them before the coming of the bubas; it is not susceptible of any other interpretation.

A translation of this stanza, as well as that on the ulcer of the genitals will be found at the end of the notes on the poem. Between the apostema and ulcer are interposed four stanzas on hernia. This section of the "*sumario*" corresponds to that *tractatus* in Avicenna which bears the following heading. *De dispositionibus horum membrorum que continuantur cum coitu.* On the front of the nineteenth leaf a small gap occurs in the text. "Here ends the text of Avicenna as done (*reportado*) by the said licentiate;" then begins "the fourth book, Fen. I, on fevers, and first he lays down the definition of fever." "Fever is a strange heat that burns in the heart and is sent thence to the body through the medium of the spirit; *and the blood descends by the veins and arteries* and thus offends the body so that it deviates from its natural actions."

We are careful to note this half of the stanza as it might become doubtful from some passages in the later works of Villalobos whether or not he believed the arteries to contain blood or anything else but spirit. What we have here is so perfectly in accordance with what is found in Galen as to the presence of blood in the arteries and that not in one but in many passages, that we might even suppose it copied from that author.

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The first stanza goes on to say that the body contains three things, one includes the members and corporeality, the other is that spirit that comes by the pulse and respirations sustaining the soul, the other comprises the humours and humidity, so that fever is of three kinds; ephemeral, hectic, (*etica*), and humoral. To ephemeral fever six stanzas are allowed; as the spirit is thin and very clear, (*clara*), its inflammation is only of one day, and altogether of lesser account, ephemeral fever is therefore mild and short; the seventh stanza is on fever from putrescence, which is putridity of the humours; eighth, from choler which may be *pura* and *nota* and *causon*, and also includes the tertian; ninth from blood with its two divisions, 1, not corrupted or synocha; 2, corrupted or synochus. The next is from phlegm, quotidian. Next those fevers alternately hot and cold, which are called *ampialos* and *liparia:* then follows another species of phlegmatic fever composed of the above and of nocturnal and diurnal fever; the stanza treats also of syncopal *humorosa,* next comes syncopal *minuta* which last has two stanzas, and two stanzas on some phlegmatic fever, next the treatment of syncopal humorosa and minuta, then comes quartan, then hectic, then hectic of old age which is marasmus, then pestilential and its signs, of which vomiting is a leading symptom; the fever is greater within than without, but we do not learn so much as we desired on pestilential fever; then comes a stanza on preservation from pestilence, of the means employed *triaca is muy especial.* Theriaca was still in great force and the patient should have those "pills Rhazes has recommended which contain three things. Avicenna also approves of their being taken every day." Villalobos disappoints us by giving only one stanza to variola and morbilli (*serampion*) both named but dealt with conjointly, and another

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stanza to their cure and regimen. We have next one stanza on compound fevers, another on *hemitriteus* and its treatment. The fevers end on the front of the 21st leaf; after which comes Fen. III on imposthumes and first the definition of apostema.

Apostema a superadded swelling is,
Of humour and of matter aqueous and flatulent,
Which drank up in the substance of the body lies
Which makes the part concerned beyond its proper size,
And nature hath departed from her proper bent,
So the humour may be good from whence the swelling came
And altogether sweet or turned to rottenness
Or again it may be mixed and we know it by that name
According to the humour that doth feed the same,
And the swelling may be soft or hard more or less.

We now come upon the train of skin diseases wherein we owe so much to the Arabs. He gives one stanza to lepra, and he says it is "cursed and damned," and indeed it deserves all that can be said of it in the way of bad character; it comes from adust choler and melancholy humour, the materia is spread through the members; it is not itself putrefied but crushed or trampled down (*conculcada*) and thus corrupts them and rots them, and makes them cold. He says that lepra makes the face of a bright red colour which tends to black. One stanza serves for the description, two for the treatment. We have to remark that lepra is placed Fen. III. Albaras and morphea nigra in the Fen. VII. We next find the following heading "On solution of continuity that is to say of some crack (*rota*) or opening or wound (*vulnus*) and the difference between it and the ulcer:" this is very apposite to the primary sign

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of the bubas which when open is not strictly a wound or ulcer, but better a lesion (*llaguita*) or little sore. Hippocrates has indeed said that in a certain sense every disease is an ulcer, using the term no doubt in the sense of damage or lesion—but Villalobos has made the distinction between wound and ulcer to be pretty clear, there is no doubt such a distinction occupied a foremost position in his mind. The vulnus is a recent aperture in the member which does not yet discharge pus or impeding humour; the ulcer is a sore (*llaga*) wherein there is already present pus and humour of corrupt nature. We see here a difference between two Spanish words, *llaga* and *vulno*. Further he says the ulcer is constituted by vulnus and cleft and solution of continuity and is maintained out of that nutriment which nature sends, it turns toward pus and superfluity. It may come also from a small pustule, crack or exudation. If the ulcer is hard we are advised to foment it with hot water until it becomes bright red.

This is on the back of the twenty-first leaf, we now come to a select group of skin diseases which Avicenna has placed apart Fen. VII, which chiefly concern appearance or decoration. Among these are tinea, alopecia, furfur capitis, morphea, albaras and asafati or saphati which is thus described:

Saphati is *botor* and *postillas*
Which on the face and head are wont to appear,
Red and moist or rather dry as may be the case,
They begin very small with scale or scabbiness,
Precursory of leprosy, 'tis said, they are.
The moist ensue from sharp humidity
In admixtion with blood corrosive and bad,

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The thin part disappears, the thick is what we see,
The dry of melancholia in verity
With choler and with blood in conjunction are made.

We will not be so sententious as to affirm what kind of dartrous affection is intended by the saphati: Avicenna does not mention it as the herald of leprosy but this latter may certainly set in with eczema, depilatio and other minor skin affections. At the time of the coming of the bubas leprosy was rife in Spain.

On the twenty-third leaf we have "sarna that is called scabies." The sarna is engendered of blood mixed with choler and melancholia, and this is dry sarna, *sarna seca* and thickened gross material; there is another in admixture with salt phlegm and it is humid sarna whence pus (*podre*) is created and itching comes of these humours except when they are very subtle and scanty, they do not then make sarna or excoriation, but dwell between the two skins, and this he says derisively is "the paradise of the Saracens."

In regard to treatment, bleed if the patient is robust; purge if it comes of salt and adust humour, give mirobalans and epithymum, and if he is a strong man let him have aloes and drink it in whey; and purge with the fumitory pills, and as soon as he is cleansed give him an ointment and some baths with herbs, "mind that he does not go astray with women," and look sharp after his regimen. The next stanza is on *desudatio* and *planta noctis*; we are now on the same leaf with the commencement of the appendix, which is devoted to the bubas, of which we intend to treat separately. There is little else to notice; we shall therefore bring this part of our disquisition to a close.

The description we have given of the volume in the

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library of the British museum may serve equally for those in Spain, except that on the title page of the copy belonging to the ministerio del fomento, there is only found the title *sumario de la medecina* without the superaddition *con un tratado sobre las pestiferas bubas*. The question will then arise, were there more editions than one of the "sumario"? This does appear to have been the case, but Villalobos who himself amended and corrected the edition, as he says, must have simplified the title while it was going through the press. This seems the fairest and under the circumstances the only possible conjecture. The work appears to have fallen into some neglect. Many writers, indeed, have stated the bare fact that Villalobos wrote a summary of medicine in "*verso mayor*," but this is all; the bare title is alone recorded. This has not been the case to the same extent with the poem on the bubas, which serves as supplement to the sumario. It is astonishing, however, that neither in the XVth, XVIth, XVIIth, or XVIIIth centuries is there found any more than a mere reference to this poem; nor does it appear to have been quoted in any treatise on syphilis. Astruc and Hensler do but mention its existence, but as they confess, neither of these authors had any acquaintance with it. In the beginning of the present century a man of profound erudition, the well-known writer D. Antonio Capmani, published a curious essay or pamphlet on the West Indian derivation of syphilis, its importation into Europe by the companions of Columbus, and its exceptional character as engrafted into European society. Among other evidence adduced by him to prove the various points of his thesis, he brings forward the treatise on the pestiferous bubas, by Francisco de Villalobos. "I know not," says my informant, "whether he

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inserted it entirely into that feuilleton, but I think it could be but a small part of it which was not inserted there. A copy of the pamphlet exists in the national library of Madrid, but on account of all the pamphlets having been separated for recent re-arrangements in the library, I was neither able to obtain a view of it nor could I find a reference to the pamphlet in the index formed of lighter publications. I firmly believe, although it is more than twenty years since I have read the work, and I have nothing but my recollection to go by, that in this is contained the entire poem on the pestiferous bubas."

It has been subsequently reproduced by the Senores Chinchilla and Hernandez Morejon in their historical biographico-bibliographical works on Spanish medicine, and by Senor Mendez Alvarez, in a Spanish translation made by him of the work of Fabre on venereal complaints, and also by Senor Gutierrez de la Vega in a work entitled the history of syphilis. Something also has been said of this poem in a *feuilleton* of the Union Médicale by one writing under the name of Guardia, in all probability a Spaniard of South American extraction. However much we may be inclined to grieve for the neglect which falls on a subject of worth, it is the opinion of Dr. Montejo that the work of Villalobos is even worse known through the efforts of his passionate admirers, and less appreciated than if it had been left in dust and in repose. Such and so many are the deviations from the text of 1498, and the general want of correctness in these impressions as to render a new edition of the poem of the bubas exceedingly desirable. This is the verdict Dr. Montejo has given on all the copies which he has seen, and the censure seems justified by what I have met with in the British Museum. There is a further censure which Dr.

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Montejo applies to all the aforesaid writers, viz. that to a most lamentable extent they were one and all ignorant of syphilis, being in this respect little advanced beyond the era of Astruc, and quite unconscious of the immense progress realised in the present century, and especially in the past generation. It may indeed be acknowledged as a fact that Villalobos has waited for the maturity of our age, to find competent critics and admirers, and as yet, it may be averred, no authors have done him the semblance of justice, with the exception Srs. Montejo and Castelo Serra.

I would gladly escape from the responsibility of noticing a German translation which has recently appeared. Whatever merit it may have to a Teutonic ear, it does scant justice to Villalobos, whether in the beauties or the difficulties of the text; it is certainly rather the effect of skill than of study. It is comprised in a work deformed by an unusual arrogance in the writer, which would be not justified by higher acquirements than any he has shown on his page.

Faithful to the order already prescribed, we shall now pass on at once to the consideration of the other works of Villalobos. The next publication of which anything is known is the *Congressiones* which bears date 1514. This book is in small folio consisting of forty-four leaves; the proper subject of the *congressiones* occupies the first thirty-eight leaves, in the remainder we find inserted some Latin letters from the hand of Villalobos. The face of the first leaf bears the frontispiece, consisting of a shield with the arms of Spain crowned or rather overspread by an eagle. At the foot of which shield we read—

Congressiones: vel duodecim
principiorum liber nuper editus.

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Lower down than these two lines we read as follows:

"*Cum privilegio.*"

Between the first two lines and this last is a narrow space without any impression. The frontispiece contains absolutely nothing more. On the back of the first leaf is the following:

"Operis premium"

"*Liber duodecim principiorum quem nuper composuit Franciscus de Villalobos artium et medicine doctor et medicus catholici principis Ferdinandi hispaniarum et utriusque sicilie regis omnis aevi regum invictissimi feliciter incipit.*"
Famosissimo doctori Ferdinando Alvarez hispaniarum et siciliarum prothomedico Franciscus deVillalobos. S."

In continuation of the seven lines on the back of the first leaf is as follows:

"*Continet opus hoc duos tractatus in primo principia disputanda simpliciter ac nude ponuntur cum introductione quandan per singulo principio intelligendo ad philosophos directa; que non dun medicine vocabulis operam debuere. In secundo uno principia ipsa probata et verificata consumabuntur.*"

"Tractatus primus. principium primum de materia nutritionis."

"*Omnes humores naturales cum sanguine materia sunt nutrimenti membrorum: solus enim sanguis omnia nutrire membra non valet.*"

"De prioritate membrorum compositorum: principium secundum.

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" *Membrorum animalis tempore atque nobilitate sunt priora composita simplicibus.*"

" De excellentia spiritus: principium tertium."

Spiritus qui in corde hominis est et ab eo per alia membra diffunditur: formaliter animatum esse perfectiori excellentiorique modo quam reliquas humani corporis partes: in presenti principio asseveramus.

De temperamento spiritus.
principium quartum.

Complexio spiritus humani cuiuslibet mixti complexione temperatior existit ac magis ad medium reducta inter extrema qualitatum primarum.

De prioritate musculorum in
motu voluntario: principium quintum.

Positiones averois in quinto sustinemus principio in qua tenet musculum esse prius mobilem motu voluntario quam nervus priusque in se recipere virtutem animalem voluntarie motivam.

De comunitate solutionis
continuitatis: principium sextum.

Membris consimilibus et membris organicis apud medicos equaliter debetur continuitatis solutio: nec primo simplicibus quam compositis aut compositis quam simplicibus couvenire potest.

De eucratissima veris cons-
titutionem: principium septimum.

Positionem Galeni in septimo principio defendimus in qua tenet constitutionem continentis in vere absolute fieri temperatissimam.

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De unica et inmediata doloris causa: principium octavum.

Unica et inmediata doloris causa solutio continuitatis est. Malitia vero complexionis in quantum talis non est causa doloris.

De ultione Avicenne: principium nonum.

In illa differentia septuagesima sexta qua redarguit Avicennam conciliator contradicit sensui: sibi ipsi: et veritati: absque modestia et sine ratione improperat Avicennam medicinalis doctrine prothomagistrum; ac demum inadvertenter exponit literam Galeni.

De virtute humiditatis: principium decimum.

Non est minoris virtutis ponenda humiditas in corporibus elementorum: sed forte maioris quam siccitas eorum.

De humiditatis graduatione: principium undecimum.

Humiditas mixtorum complexionalis ad tertium usque gradum inclusive elevari potest. Adhuc et ad quartum intenditur gradum sicut et quelibit qualitatum primarum.

De efficatia Avicenne contra Galenum in capitulo de febre sanguinis: principium duodecimum.

Falluntur conciliator et eins consectanei super capitulo Avicenne quod incipit. opinatus est Galenus. Avicennam non bene exponentes neque Galenum excusantes."

The indulgence of the reader is requested not only for any mistakes that may have occurred in interpreting the text, which is replete with puzzling abbreviations but also for any defect of correction where it seems

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liable to it: indeed the impression of the work seems to have been executed with some degree of carelessness. The index and heading of the contents in the body of the work are sometimes a little discordant, as above, *Positiones averois etc in qua tenet musculum esse prius mobilem voluntarie quam nervus.* We find in the body of the work *prius motu voluntario quam nervum.* Though not exactly macaronic the Latin is not first rate. In the introduction to the letter we observe the Spanish word *Mas* which the printer has possibly inserted for *Nos.*

Since mention is more than once made of the *Conciliator* in these our pages, and that this word is also used to denote a class, it will be not amiss to quote from the face of the sixth leaf of the Congressiones to show who is designed by that name in the writings of their author. The text runs thus, *Conciliator est quidam liber inter medicos celebratus qui continet ducenta decem capitula que differentie appellantur: in eis enim ponuntur omnes discordie et opiniones de quibus in medicina versatur: et aduc in parte philosophie naturalis: composuit autem hoc volumen quidam petrus apponensis patavinus civis et preclarus doctor: in omnigena doctrina eruditissimus ut apparet in discursu eiusdem operis. in quo quidem aperuit in primis portas medicinalium disputationum. ab istoque fonte profluunt amnes plurimi quibus universe medicine schole irrigantur: ab eo enim omnes moderni doctòres hausere doctrinas plures: ejusque vestigia olfacere. et animum atque audatiam scribendi ab eodem obtinuere. Quandocumque in omni loco omnique materia unum invenies dimicantem, quosdam quidem fugantem, alios autem vulnerantem plurimosque lacerantem; devastantemque et prædam insectantem: qui nulli peperit, hic est petrus apponensis vel de abano. sed tanto eo maior fuit noster princeps avicena quanto optimus monarcha prevalebit*

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strenuo atque famoso militi ut in progressu probatoris principii noni apparebit."

It is a comfort to the curious in medical history that the writings of this Irish peacemaker still survive, and will no doubt be instructive in questions to which a true physician can never remain indifferent.

At the end of the back of the thirty-eighth leaf of the *Congressiones* the last of the principles maintained by Villalobos having been discussed, the following lines are seen:

Explicet liber duodecim principiorum qui etiam congressiones appellantur in oppido Madrid assistente catholico rege. martii quintadecima añ̃o xp̃i. millesimo quingentesimo quarto decimo.

Lower down are these words:

Ex impressione Salamantina per honorabilem virum Laurentium de Liom de deis. Anno domini millesimo quingentesimo decimo quarto.

Laus Deo.

In the six remaining leaves of the same book Villalobos has inserted certain letters of his written also in the Latin tongue. In the front of the thirty-ninth leaf he thus addresses the reader:

Ad lectores

Epistolas quas dam iocosas libuit hic inserere: ut qui ex bello preterito duodecim congressiones defatigati et fastidiosi remanserint: aliquantulam recipiant mentalem recreationem. Non ergo dijudicet eas lector immodestas. Maxime de morbis in qualibet domo contingentibus referunt hystorias lepidas atque facetas. Hortor quoque lectores ne quis audeat eas ad sermonem traducere

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patrium. Habet enim latinum eloquium quandam etiam in rebus absurdis moderationem et honestatem. quibus quilibet festivi sermones absque calumnia per medium literatorum pertransire possunt. cum tamen eosdem in barbarica lingua proferre esset nefas. Alias quoque epistolas meas quas in vita scripsi amicis et optimatibus viris reservavi equidem ponendas in fine operis mei: in quo seriem Aristotilis exposui que de generatione et de partibus animalium disseruit. Nunc autem sufficiant he tanquam transacto spectaculo in convivio fructus oblatus."

I think it not amiss to have quoted this passage, which proclaims the serious and knotty character of the *Congressiones*, and also because it announces the fact of his having reserved the publication of other letters for the opportunity he expects in publishing a commentary on that book of Aristotle which treats of Generation and the parts of Animals. It is now a matter of conjecture whether the work he designed ever saw the light. Nothing would be a more legitimate subject of regret than that these letters of Villalobos which abound in Attic wit, and which are also so eminently calculated to shed a strong light on the history and character of the times should have been destroyed. The dates at which those printed with the *congressiones* were written are very interesting; they are as follows:

1st. To his father, dated from Zamora, 16th August, 1498.

2nd. To *Gonzales de Moros*, a very skilful physician, 20th June, 1501, from whence written not stated.

3rd. To the same, with date 20th April, 1507, from whence not stated.

4th To his father, dated from Santa Maria del Campo, 25th September, 1507.

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5th. To *Don Garcia de Toledo*, eldest son of the duke of Alba, dated 15th April, 1508; not stated from whence written.

6th. To Doctor *de la Parra*, prothomedico, dated 23rd July, 1508, not stated from whence.

7th. To the Duke of *Alba*, with date 1st March, 1509, not stated from whence.

8th. To *Cosmo de Toledo*, dated 9th March, 1509, from what point not stated.

9th. To the same, 1st January, 1510. Idem.

10th. To the same, 10th October, 1510. Idem.

It will be seen then that the series of letters extended from the year 1498 to A.D. 1510, which renders them historically of much interest; an additional interest is afforded by the freedom with which they are professedly written. The copy of the *Congressiones* from which the above description is drawn, is the property of S. D. Juan Sancho Rayon. It may be believed to be of the utmost rarity.

The third work published by Francisco Lopez of which his bibliographers give any account is a commentary on the natural history of Pliny. In the short biographical notice by Alfonso de Castro, which precedes the *Problemas* in the 36th Vol. of Aribau, this work is mentioned as *Glosa in Plinii historiæ naturalis primum et secundum libros*. Alcalá, por Miguel Equia año de 1524. Equally with the last mentioned, this work is not found on the shelves of the British Museum. Curiously enough its existence is not hinted at by Capmani or Morejon, or by Chinchilla or Ticknor, and yet we find it mentioned in the *Dictionnaire des sciences médicales*, Paris, A.D. 1825. *Biographie médicale*, Tom. vii. Glossa in Plinii Historiæ naturalis primum et secundum libros. *Alcalá de Hénares*, 1524. fol.

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The following description of the work I owe to Dr. Montejo. The only copy he has had the opportunity of inspecting belongs to Senor D. Sancho Rayon, librarian to the *Ministerio del Fomento*. If the copy is not *unicum* it is at least extremely rare. It wants the first leaf, on which account the title cannot be given.

It is printed in gothic letter, and with exception of the king's licence the whole is in Latin. The size is folio. The book consists of 122 leaves, only 106 leaves of which have numbers suffixed, namely, those on which are printed the natural history of Pliny, with the commentaries of Villalobos. It begins with a preface or dedication by Villalobos (the first leaf being wanting this cannot be described), the table or index of the contents, and the prohemium of Pliny, with his commentaries, twelve leaves without numbers. At the termination there is a leaf on which is the king's licence (in Spanish), and the close (*final*) of the impression and some verses by *Felipe Sbarroyar*; then follows a blank leaf, another on which the errata are signalised by the highly esteemed Doctor de Alcalá de Hénares, Cartagena, and lastly, another leaf in blank. After the prohemium begins the work on the first numbered leaf in manner following. *Expositio litteralis in Plinium Veronensem Francisci de Villalobos medici divi Charoli cesaris Augusti Romanorum. Hispaniarum et utriusque sicilie invictissimi regis: et insularum oceani occidentalis: et vastissimi continentis usque ad alteram terre faciem imperatoris potentissimi feliciter incipit.* After the royal licence which at the close or *final* of the book occupies part of the front of the first unnumbered leaf, a licence which was granted at Valladolid, then come the following words:

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Commentarii in naturalibus Plinii historiam Francisci de Villalobos medici Imperatorii. opus quidem preclarum ac luculentum nostra tempestate nunc primo editum ceteris incognitum. feliciter expliciuntur. Absolutum compluti in amplissima officina Michaelis de Guia viri ingeniosissimi ac in typica arte sollertissimi Anno domini Millesimo quingentesimo vigesimo quarto. Idibus Octobris.

The fourth and last publication of Villalobos of which we find any mention is the "*Problemas*," containing his problems, and some other works of his. The second edition is the earliest which is known in Madrid, bearing date A.D. 1544. It is in gothic letter. An edition had preceded this in 1543. It is the most popular and best known work of Villalobos. The title is "The book intitled the Problems of Villalobos, which treats of bodies natural and moral. And two dialogues on medicine and the treatise on the three great (Grandes) —— and a canzone, and the comedy of Amphytrion, M.D.XLIIII." The size is folio, it is written in double columns, and is composed in all of 72 leaves, with numbers, and three in the beginning without numbers. The prologue is dedicated to the very high and enlightened prince and lord, the lord infant don Luis of Portugal, etc. On the back of the leaf numbered 49 there is an ending (*final*) thus expressed: "Here ends the present work of doctor Villalobos, that is to say, the Problems, the dialogue on natural heat, the dialogue which happened between him and one of rank in this realm, the treatise of the three great —— and 'cancion' with gloss. After which will follow the chief among the comedies of Plautus, translated by the same author and its gloss: corrected and

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amended anew." In the front of the leaf following which is the fiftieth, at the front of the royal arms, you read, "The comedy of Plautus called Amphytrion: translated by the doctor Villalobos. Glosed by him in obscure passages, newly printed and amended by the same author." The end of the entire work, which is found in the first of the seventy-second leaf, says thus: "The present book of the doctor Villalobos, that is to say: the problems: and the two dialogues: and the treatise of the three great —— and the comedy of Amphytrion. Translated by the same author was printed in the very noble and loyal city of Çaragoça in the house of George Coci: at expence of Pedro Bernus and Bartholeme de Nagera. Completed on the fifth of the month of January, the year of our Lord Jesus Christ: one thousand five hundred and forty-four." This work as above described seems to have been the latest and most matured of his productions. This is the work of which we have spoken as bound up in the *Biblioteca di autores espagnoles* of Aribau, a well deserved honour and no less a fortunate circumstance, when we consider the neglect into which his other works have fallen, and the narrow escape they have had from destruction. The publication as above described went through many editions in the 16th century. Mentioned in Aribau are the editions Zamora, A.D. 1543; Saragossa, A.D. 1544; Seville, A.D. 1550; Saragossa, 1550; Sevilla, 1574.

There is a copy in the British Museum in very small octavo, A.D. 1574, printed at Seville, in Roman letter. With some slight alterations in orthography it answers very well to the description given above. As the frontispiece declares that it is printed in the house of Hernando Diaz at Seville in *en la calle de la Sierpe*, año. MDLXXIIII. It is paged one side only, 184 leaves for the first part and 86 for the

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Amphytrion, with two pages for the index of both parts. The second part, viz. of the Amphytrion, as part of the text says that this translation from Plautus was first printed and published in Calatayud, on the 6th of October, 1515. All that which in the preceding description begins the end of the entire work, etc., is omitted in the edition A.D. 1574. The end is thus, "May it please God and his holy mother that they guide and place me in an even path whence in this brief career there may be less cause to stumble, and may it meet your approval, most noble lord, and be for your service and satisfaction. Amen de calatayud." This is at the end of his address, which contains his reasons for not quitting court.

The dialogue with one of importance in the realms, who was no other than the duke of Candia, is full of happy buffoonery; it is a taste which in literature has now died out. The three great ones are great pride, great talking, and great laughter. In the first editions a blank was left after the adjective, so that you may fill it in with nuisances, torments, annoyances, or any word you may think appropriate; not unlikely it was a cut at the institution of grandees, which took place contemporaneously and under his eyes. When they would, Charles made grandees of his *ricos hombres*, and found them very willing to barter their independence for a title. The dialogue on natural heat with one on tertian ague which accompanies it, are those which are published in this our translation. Dialogue was much in use as a literary form up to the middle of the fifteenth century.

The "cancion" is a searching and touching plaint on the vanity of human wishes. It consists of but few lines; the gloss in prose is of greater length. The same is the case with the other essays, as we may call them; they

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consist of metre and gloss. It will be remembered in the discourse which Don Quixote holds with the young scholar, he complains that the gloss swallows up the text. Villalobos warns us that it is the gloss we have to follow with attention; the metre is but a poor thing. The problems, the idea of which he seems to have derived from those of Aristotle, refer as he says to natural and moral bodies, or as we should say, subjects.

The repeated proofs afforded by Villalobos of an extreme devotion to science maintained through a long period of existence is certainly suggestive of the idea that other works of his may have existed which in course of time have perished. We know at least that one of his publications, the *Congressiones*, was replied to by a physician in a work that must have had some currency. Information of a work written in Latin has been communicated to me by Dr. Montejo, as one which he had under his eyes at the time of writing; it consists of 16 leaves folio without pagination. The title on the frontispiece is as follows: *Eccellentissimi Ioanis Roderici sacre Cesaree imperatoris medici peritissimi tractatus contra sex conclusiones. XII. Principiorum Francisci de Villalobos sacre cesaree Maiestatis Medici una cum aliis conclusionibus novarum fantasiarum nunc ab eodem Ioanne Roderico in lucem editis.* At time of going to press I can give no further reference to it. One may certainly opine Villalobos would not leave this provocation unanswered and that he would defend his conclusion by some other piece. Concerning the letters contained in our translation sufficient account will be given where they are introduced.

In the valuable notes attached to the Spanish translation of Ticknor's history of Spanish literature, Madrid, 1851—6, Vol. ii, Cap. v, page 91, we find it mentioned

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that there exists in the library of Salazar now united with the library of the Royal Academy of History, Madrid (Miscellaneas, num. 44), a manuscript volume by Villalobos, which if one may judge of the heading, wherein is seen "sixth or last collation," would doubtless form part of some larger work which never came under the press. The interlocutors are the aforesaid Villalobos and a certain Bustamente, and the subject is some medical question or questions but treated in a familiar and festive vein, the whole made excellently agreeable by lively anecdote and pleasant tales interspersed, as mostly happens with this author. The note goes on to say there are found in the same volume letters by the same hand, written in the Latin tongue, and addressed to the archbishop of Toledo, D. Alfonso da Fonseca, in which the worthy physician gives free play to his lively humour with all that neatness and grace of expression which everywhere characterise him. He tells of what is going on at the emperor's court, being then in ordinary attendance as physician. To these letters we shall subsequently have occasion to refer. It is more than probable other epistles from his hands are dispersed abroad.

In the days in which Villalobos drew his breath, no literary form was equally popular with that of the Cancionero, or collection of songs and poetry, a class of books that issued in comparative abundance from the press; to a great extent they were repetitions one of the other. The talented and learned annotators of Ticknor's work in the Spanish translation, have found the name of Villalobos more than once repeated in a collection without date, which they conjecture to have been made in the middle of the fifteenth century; in this there is doubtless some error; see Ticknor, Hist. lit. española

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con notas por. *D. P. de Gayangos* y *D. E. de Vedia.* Madrid, 1851—56. In the last edition of Ticknor, he glosses over this note but speaks of a *cancionero*, discovered in the excellent library of Wolfenbüttel in Brunswick; a library rich both in books, manuscripts, and to which the name of *Lessing* has long since given distinction. This *cancionero* bears date 1554. It contains several pieces by Villalobos. These are noticed in the description given of it by Dr. Ferdinand Wolf (see *Wolf's beitrag zur bibliographies der Cancioneros, u. s. w. Wien.* A.D. 1853). But those who are satisfied with accepting Ticknor's estimate of our author's merits are little likely to visit Wolfenbüttel for the sake of disinterring them or to set great store by what is mentioned here. Though short of recantation there is a perceivable difference in the last two editions of Ticknor's work when dealing with the merits of Villalobos. This critic has no sympathy with the subjects which as physician and philosopher chiefly engaged our author's attention, and as a man of letters he does him scant justice, damning him with a share of praise which it may here be permitted to call feeble and inadequate.

The superficiality of the censure which bestows a modern origin on natural science scarce warrants a passing reflection. Above his contemporaries Villalobos seems particularly fortunate in the choice he made of his subjects. We get a broad champaign view of the entire field of human thought. The age in which he lived has been called the watershed of human history. In spite of its bold, intrepid character, there is profuseness, intricacy, futility, in many of its literary productions. From such faults the special training of Villalobos and the lucidity of his thought have preserved him.

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BIOGRAPHICAL.

If I have been largely indebted to Dr. Montejo for information concerning the works of Villalobos this is yet more the case as regards his biography, which, but for the researches of that gentleman could never have been written. Such scanty materials for it as are found dispersedly in Spanish and foreign literature are worthy of no confidence, and the reader is hereby warned against them.

Francisco Lopez, the early appellative of him who is since known to us as *de Villalobos*, first saw the light of day in the year 1473, or 1474 after the birth of Christ. The fact is placed beyond doubt by the contents of a letter addressed by him to the celebrated doctor in medicine, *Gonzales de Moros*, on the 22nd day of April, A.D. 1507, a letter which is found in the Congressiones, standing third in order among those contained in that work, and occupying the part of the back of the fortieth leaf and large part of the leaf next following: in the conclusion of the letter Villalobos says, *Ex his ergo accentis que nosti astronomi tui aptum videbis mendacium: ignoscat ille convitiis quisquis sit. et profecto si me superi faveant neque cousque mecum fortuna seviat ex me genitus numquam erit medicus nisi extra meam potestatem (se) eripiat dum aduc ordiar nunc enim nisi trecesimum ac tertium annum post tergum relinquo. Vale. Aprilis vicesimo secundo, año xpi millesimo quingentesimo septimo.*

If on the 22nd day of April, A.D. 1507, he was more than thirty-three years of age, he must have been born

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either in the year 1473, or in that immediately following. In this first point then are controverted the statements of Ticknor, Capmani, Chinchilla, Morejon, and other writers concerning the date of his birth.

Francisco Lopez was born in Villalobos, township (*villa*) of the province of Zamora, in the judicial circuit of Benavente, in the diocese of Leon, and lying within the boundary of the ancient kingdom of that name. All modern works of reference give Toledo as his birth-place, but with no sufficient ground of evidence; in none of them is found the suggestion that the place of his birth and nurture was Villalobos. The *Sumario de la medicina* certainly favours the idea that he, our author, was born on the estates of the marquis of Astorga; in a correspondence which he had with me on the subject Dr. Montejo expresses himself thus: "Scanning over the *pueblos* and populations which were subject to the marquis, as included in his domain, I was struck," he says, "by the fact that this great seigneur bore for early title that of count of Villalobos, a title much more ancient in the family of the Alvarez Osorio than is that of the marquis of Astorga. It was thus," he further says, "that I was led first to the suspicion that Villalobos was the *pueblo* or place where our great physician was born." Through the indulgent favour of the present inheritor of the title Dr. Montejo subsequently enjoyed the opportunity of perusing a copy of the will of Juan Alvarez Ossorio, lord of Villalobos and Castroverde, delivered at Castroverde, 25th day of August, A.D. 1417.

In this testamentary act he increases the *mayorazgo* or entail attached to the countship, and "my surprise, says Dr. Montejo, was truly great when I saw that of a considerable number of individuals mentioned in this deed, there

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were so very many who after their first appellative had the names of Villaprando, Castroverde, and Villalobos affixed. There remains scarce a doubt, in fact, that Francisco Lopez was born at Villalobos, and that in taking the name of his native place he followed what was largely the custom of his age. Thus have we *Julian Gutierrez de Toledo*, because this Julian was born at Toledo, *Antich Roca de Gerona*, as born at Gerona, and for the like reasons *Fernan Gomez de Ciudad Real*, *Luis Lobera de Avila*, *Alfonso Chirino de Guadalajara*, *Francisco Sanchez de Oropesa*, &c."

Moreover the said will on the back of the nineteenth page contains the following clause :

" Also I will and determine that *Constanza Fernandez*, wife that was of the doctor *Francisco Garcia de Villalprando,* whom may God assoil, and the sons of the said doctor and of her, that is to say, Diego Garcia, bachelor *en Decretos*, and Sancho and Rodrigo, who learn study in Salamanca, that they have and hold of the said Pedro Alvarez Osorio, my son, the mill called *de Palacio*, situated," &c.

Villalobos and Villalprando were both of them *pueblos* of the same province of Zamora, bordering on that of Salamanca. It is not unlikely that our poet in his youth was in much the same case as earlier had been the sons of Dr. Francisco Garcia, though we cannot tell whether or how far he was assisted during the period of his studies by the benevolence of the marquis of Astorga.

The father and grandfather of Francisco Lopez were physicians to the house of Astorga ; he has stated this in one of the earliest stanzas of the sumario, and he was "intended to fill the same office," though in the event he far outstripped this early promise. Let us suppose then that

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he was assisted by the marquis, to some extent at least, during the period of his studies, as well as warmed by his encouragement. It was in some sort a royal house, the possessor, second of that name being first cousin by blood (*carnal primo*) of King Ferdinand; in subsequent generations the family was of first account in Spain, vying with those of ducal rank. The counts of Altamira, not less illustrious, proceed from the same stem.

Villalobos was twenty-four years of age or so when he published the sumario. If we allow but four years for the completion of so arduous an undertaking, it would have been begun A.D. 1494, the year which is generally stated as that in which syphilis was declared. He must have had the subject continually before his eyes and impressed upon his fancy at this early period of his studies; on the question of its novelty no man would have been better informed, it was the common topic of his age. The people of that day, he says, were all aghast, and even the literate were at a nonplus. We know from subsequent writers that, on an estimate, one twentieth of the people of Spain became affected eventually. At the date of this publication Villalobos was still a student, but he was able to subscribe himself licentiate of the school (*estudio*) of Salamanca, which school or schools had not yet been subjected to those reforms or benefited by that reconstruction and considerable accessions to it which took place from ten to sixteen years later, on the model of the university of Paris. When and where our author took his doctor's degree is wholly unknown to us, nor do we hear of him again till after the lapse of sixteen years, A.D. 1514, when we find him installed as physician to King Ferdinand, one of the most sagacious sovereigns who have ever appeared in the field of European history, attending the king in that dis-

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tressing infirmity which soon afterwards brought him to the grave. No doubt Villalobos traversed a large part of Spain in the course of his attendance on the monarch; we find that the *Congressiones* were finished at Madrid while he had the charge of the royal health; and in his translation of the Amphytrion, which is dated *Calatayud*, on the 6th of October, A.D. 1515, it is mentioned that at the time of its publication he was then attending upon his majesty, who, indeed, died some four months after. Already, as it would seem, Villalobos was aweary of the court. At the close of the Amphytrion, in phrase addressed to the eldest son of the counts of Ossorio, at whose request he had made the translation, our author says, "I present you with this as a return for so many favours and kindnesses received by me in this court, seeing that I intend, God willing, to quit it shortly. And if the very serious illness of our lord the king detained me not, for it were base to leave his highness in such extremity, already I had betaken myself to some harbour or port of refuge, where I might have escape from the strange gulfs and many perils of these seas:" (on the back of the leaf lxxi, edition 1544.) At this time, when he contemplated retirement from court life, he must have been but forty years old; his success argues a high degree of competency, and his early disgust certainly betokens a more than common share of moral sensibility, with far less of ambition and confidence in this world's promises than are commonly met with. His position at court completely dispels the assertion which has been ventured on by certain writers, that a want of early success made him deviate from the paths of medicine into those of literary enterprise, and that an equal disappointment in this new line brought him back once more to medicine.

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One may judge from some passages in the *problemas* that Villalobos passed over into Italy, and that he took a share, as spectator, in the wars which Charles the First, King of Spain, fifth elected Emperor of Germany of that name, the monarch better known to us as Charles Quint, carried on in that peninsula with the French. In the gloss of the natural history of Pliny he appears as physician to the emperor, by whose side it is beyond a doubt that he passed a considerable portion of his life.

I am happy to be able to publish a letter which is doubly interesting as characteristic of our poet's epistolary style, and as shedding vigorous light on a point of general interest in history, viz. the personal challenge of Francis the First of France to his subtle and ruthless adversary Charles Quint. The letter is addressed to the bishop of Toledo; it exists as manuscript in the library of the *academia de la historia* at Madrid, whence Dr. Montejo has been so obliging as to procure me an authentic copy or rather facsimile. The particular direction for it in the library is "in the collection of D. Luis de Salazar y Castro, volume in folio manuscript marked N 44, Miscellanea f. xxxxiv, MS. folios 329, 330." It is the volume 44 of the Miscellanies in folio of the marquis of Montelegre, conde de Villambrosa. The date of the challenge 7th June, A.D. 1528, is attached to the copy as that of the day on which the herald of King Francis presented himself before the emperor. The date in itself is historically valuable, as it is often erroneously given. In a life of Charles Quint, by S. Alfonso Ulloa, written in Italian during the life of Charles's successor and son, Philip II, I find the date given 11th November, 1527, and that it was delivered in Burgos, and a modern historian in his life of Francis the First, evidently not knowing the date, omits it, merely stating that the

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challenge was delivered at Monçon, in Aragon. The date affixed by the challenger in Paris, according to P. Daniel, t. vii, p. 657, is March, 1528, before Easter, and this last is in accordance with that on the letter before us, which is here given in translation, and, as I have said, up to the present time it has never been published in Spain or elsewhere.

Most illustrious Señor,

Never in life was a man seen so merry at all hours of the day and so happy and delighted always as now this our emperor, ever since he was invited to do combat and slaughter with the King of France. I could never believe that in the human generation there was that difference so wide apart between one and another as there is in this respect between his majesty and me; as for myself, though the affair is none of mine, my chitterlings horribly are stirred only to think of it, and if I had to go out to do battle with that beast for my lord I should turn friar or hide myself in the vaults of Seville, or bury myself in the caves and taverns of the earth. But here is the emperor, with everything that is good in life, who feels no such content in all the softness and prosperity of his state, but that he had rather be challenged to lose it all, nay, and his life to boot.

Oh! providence of God how great! that no one should envy another or wish to change his lot! I protest to your lordship that until now I have lived very discontented as physician, in the performance of my duties as such. But now had I rather hold the urinal in my left than even the sceptre in my right. With the urinal, see you, a man stands as with a bow, whom he aims at he strikes, whom he would kill he kills: with the sceptre far otherwise; there

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you are a mark to be struck at, likely to be killed while you are minded to kill. Oh! savage hearts of men, which cannot be satisfied with less than the blood of their fellowmen, and of those, too, that are such great princes and kings. What a comfort to think that with so great and powerful lords and such capital enemies, no sure field can be found in all this ample world. And now the emperor dreams of nothing else but how tables can be spread upon the sea, whereon, with perfect security to both, each one can emperil the other, ever imagining some kind of way how flowers and herbs may be made to grow upon the tips of the indomitable, furious waves. His majesty eats and drinks better than ever, and wears a flattering appearance, and really gets fat with it all, and he holds such tasteful conversation with every one that it is disgustful to the whole of us, as thinking it wholly out of place and quite inopportune. And if the affair should never come to blows, God grant that he never be without some challenger, only on the enemy may be spit all the hurt and bitterness, and we that are the members may be preserved from bad humours and rheums. This is all that I am able to tell you about the challenge, the rest I leave to chroniclers, because, as for the wording of cartels and the reasons and justifications on each side, whether they be so or whether they be so, it matters not one maravedi. As regards the *Cortes*, they say that with this stimulus there'll run more water than before, and that service will be brisker than ever; sure enough with this heat of the weather, if the paste does not rise pretty quick, it will not fail to turn rapidly sour with the customary procrastinations. The count de Benevento is much overcome by his sufferings; he has already had two bleedings, besides which I am not without apprehension there is something bad in store for him, they

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keep him so very much shut up and apart from all the world.

from Monçon, xij of June,
m. y. s.
the illustrious hands of yr. lordship kisses,
the doctor
DE VILLALOBOS.

To the illustrious Señor the
Archbishop of Toledo, my lord.

The following letter is borrowed from the notes by Sr. Gayangos, which are added to the Spanish translation of Ticknor's work; it is derived from the same collection of letters to which the preceding belongs, in the library of Salazar, now contained in that of the academy of history.

MOST ILLUSTRIOUS SEÑOR,

Since I wrote to your lordship the other day this city has become so monstrous big with games and feasts of every kind that, not being able to hold them in their womb, some have shed two at a birth, nay up to half a score, and some have been so extremely unlucky as to drop them prematurely. The first great game of the principal personages was on Thursday xiij of the month, on which day were roasted some thirteen men and women and lots of statues, and a great many were reconciled, and even *id per jocum factum est, miseris tamen patientibus serio pervertebatur.* The officials here seem handsomely paid for the acts that compose these comedies, but I think that it is a bad penny to some who take a share in the performance.

On the same day was a tilting with reeds (*juego de cañas*), another kind of game in which his majesty came out fine,

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Al yll.mo Señor el Señor
Arbpo de Toledo mi Señor

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de mjõon. xij. de junio.

m. y - s.

las yll.mas manos de. v. s. besa

el doctor de Vlloa

the best player of them all and certainly the finest gentleman. There is no doubt the ladies of Toledo will be off their heads for him, they are really past all counting as to numbers and variety, and pretty as your lordship can ever hope to see. *quicquid dicant alterius partis assentatores.* Next day, Friday, was a miscarriage; the procession and feasts of the Corpus Christi, such great representations and so excellently done as no pen can write it. On rising from repast the games began, his majesty and the queen spying from a window and the other windows looked at it; a more ornate or pompous thing was never seen with human eyes. In the procession went a countless flock of persons, and many considerable things in the way of relic and exceeding wealth of ornaments, both in silver and gold. The whole procession had done coming in at about six in the evening; they say some hundred thousand persons in it, and that two million candles were consumed, so that if they did not see one another's faces in all the crush it's a pity. On the following Saturday was the festival of the ladies of Valencia, and had it not been for the news that came to us from Italy at that date, it would have been fine indeed; there were more than a hundred and eighty ladies of the city assembled in the great room, where, like great floods of water, they absorbed and engulfed the little stream of the queen's following. There were of brocade dresses some hundred and fifty worn, all worked with gold thread; some of the ladies so beautiful as to be really past describing, and one and all so nice to talk to as surpasses human conception. They danced most wonderfully, that is to say some seventy of them, and from five in the evening till midnight the festival was at full swing, every one of them doing their best. In this rare spectacle his majesty

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showed small gust, being sadly depressed by the loss of so many and such good servants of his. What can we say of it but that it is *ira et ultio domini in transgressores et utinam non seviat in consentientibus*. Your lordship will better learn where you are of all that happened at sea. From Valencia, Sunday morning, 17 of May, in presence of the secretary and of Pedro Gonzalez. Illustrious Señor

The hands of your lordship kisses,

THE DOCTOR DE VILLALOBOS.

In the year 1528, as may be seen in the itinerary of Vandenesse, between the 3rd and 20th of May the emperor was at Valencia. He here received the news of the smashing defeat of his sea squadron by Philippino Doria and the French, with the loss of many brave and noble captains, among them Ugo de Moncada, viceroy of Naples, with the capture of many others of note. This is the event alluded to as casting a damp upon the games. The same notes make mention of another letter in the same collection of Salazar, which tells of a journey and of a pleasant passage between Villalobos and the *camarera mayor*, a Portuguese lady, the story of which is told in dialogue very farcical.

The narrow, cold, shifting and ungenerous nature of Charles Quint becomes more and more declared the wider the page of history is outspread. In nothing, perhaps, is it so notorious as in his treatment of the French king. The same features of character are repeated in the treatment of his faithful Villalobos, a man of the highest order of genius and well worthy of esteem. It does not appear that this gifted man incurred his majesty's displeasure in any way, but from some letters of his it would appear that his favour at court was sensibly on the

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wane subsequently to the death of the empress, 1st May, 1539; there is also reason to opine that the marked preference which the emperor accorded to André Laguña, one of the most eminent of Spanish physicians, after the loss of his consort, has something to do with this neglect. In addition to his medical and literary abilities, which were of no common order, the same Laguña was gifted with a rare oratorical talent, which the monarch was well capable of appreciating. We see then our poet, who had contemplated retirement so early as the year 1515, being then not a little disgusted with the meannesses of the court, was prevailed on to continue his service nearly thirty years longer, the latter part of the time being embittered by unmerited disgrace. The truth is that this emperor was a man of no lively apprehension, slow and procrastinating in all he intended to do, and wholly inaccessible to impressions of fancy. Sensual in the pleasures of the table, far more than is generally allowed, he was a cruel bigot in religion; but ever accessible and patient in audience and discourse. He had no objection to his servants helping themselves, though he was not inclined to give them any assistance. This is well seen in his *factotum* and only counsellor for the affairs of Spain, the *Gran. Comendador de los Cobos*, secretary to his cesarian and catholic majesty. Cobos got amazingly rich, since all favours passed through his hands; he was a civil obliging person; with that civility which it seems was the only coin in which poor Villalobos was paid. The following letter, which is addressed to the commander Francisco de los Cobos, is extremely valuable as evidence of his mental and bodily condition at so critical a period of life as that of his retirement from court. The letter is addressed from the *monte de Valderas*, a *pueblo* near to that of Vil-

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lalobos, a spot famed as it would seem for the breed of horses.

The same vein of loose pleasantry runs through the letter as we find elsewhere in his writings; this is indeed very signal where he speaks of the sad infirmity with which it had pleased God to afflict him at that particular period. From what to another would have been a source of unmitigated repining he contrives to extract some entertainment for his friends. Villalobos was far advanced in age, the silver cord was loosened, he was overtaken by a scrotal hernia of no common dimensions, but even this does not quell his spirit or wholly subdue his gaiety. I have received from Dr. Montejo the inestimable favour of this letter, which he procured for me at great pains and with inappreciable kindness. Like the first of these three letters, it has never yet appeared in print, neither in this country nor in Spain.

VERY ILLUSTRIOUS SIR,

If in Valladolid under your lordship's roof and in company of Señor Don Juan Manuel I was inclined to feel lonely and repentant, with still some hankering in me for the solace and conditions of the court, what should I do in Valderas but hang myself upon the nearest oak? All the devils I knew there appeared once more to me, teasing and buffooning and spreading before me a thousand and one temptations. One of these gives me a hundred and fifty odds and the same to all of them, and as they sweep away the stakes there I am stuck like a fool. And as I stand lazying more asleep than awake, I find all at once that it is nothing, and then I feel the sting far worse, and then I will go back to court and once again I'll try my luck. By and by comes a devil half

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choked, it seems, with laughter, and he shows me the table of your seignory all spread, set with lights and covered with handsome dishes, and every mouth well wreathed with smiles and pleasant artifices of discourse and subtleties that sweeten conversation. Here one beaming, all another mute and listening, some other grave and cold, and yet another with anecdote and tale. When yet I chewed the cud of my discontents I used to note the blindness of several, and hence many a night I drew some private consolation of my own, and here comes one and hits me such a rouser on the pate, indeed I scarce can bear it. And then brushes up a devil, and he tells me there is no hope of remedy for my sons if I remain here; but by staying at court there is; because, being under the emperor's gaze, one day or another he will think to give them some provision. This one gets his answer, for I tell him in such expectancy have I wasted up to seventy years, few men there are who live so long, and since the time of settlement seems still far off as ever, it is quite excusable to wait no longer. To this he makes reply that Fonseca after seventy years of age expected the appointment of *encomienda mayor*, and carried it off too; and the great chancellor expected to be pope, and if he had not lost the result half way perhaps he might have got his fancy; and Don Diego Osorio hoped to be *mayor-domo mayor* of the empress, and had he not died of old age possibly he might have been called so; and the bishop of Avila hoped to be translated to Toledo, and Don Luis de la Cerda hoped for the marriage of the prince because he had been tutor to his first born. Then comes another devil, who is always seen warming his heels somewhere near the door of the chamber, and he says, says he, "When did your low beast of a grandfather ever dream

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that you would be received into the royal chamber, and so many great ones waiting outside, and that his majesty would find pleasure in wasting words on the like of you, being a monarch so vastly celebrated in all the wide world even those who shall come here a thousand years from now will pay money down to see a small picture of him, let alone see him alive and make free with him as you have leave to do?" To this I answered, "Oh! filthy, beastly worldling! Well do I know that for such as me it is a grand thing to talk in friendly sort to the emperor, but far better is it for those who manage to make something of it. And what am I the better for it all? I swear to God, when I had done laughing with him, if ever I spoke of my necessities his look grew so troubled, and such a change came over him entirely, and he cut me so short in his answer, that my malt began to tumble all to pieces, and so with some excuse I found means to make my bow, glad enough indeed I was to get away. But I tell you it is time lost to keep on terms of friendship with the emperor, for he makes use of everything for his purpose as ever he is wont to do. I paid the cost in my body, demolishing it bit by bit in the service of his sons, and I paid the cost in my soul, minishing it with a thousand vexations of the spirit and many heart-throes and violent disturbances, taking upon me all the griefs that were his; and he, what did it cost him? nothing but that little laugh and that pastime of feeding me with air." Directly he heard me say this, the devil was off like a shot to look for Don Luis de Zuñiga and Don Enrique de Toledo and such fine gentlemen.

Then comes a very little devil and says, "What can you get now in Valderas? You have your poor little trellis bed, that cannot advantage you much; and some basket

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of fruit or so, worth at most two maravedis. Surely at court it was better; you could not gain less than you do, and you might game and spend if you would, like any duke of them all." And I say, "More profit in what I lose here than in all that's made in staying there; and this you may very well understand by the scraps of things I brought with me thence. Moreover, at Valderas there are appliances for getting an inheritance that far outweighs every other thing of the kind. 'Tis the soul, for indeed the time that is laid up for me in this life seems narrow and brief, and I fear that even now I am too late to enter timely on the work that has no end in time." Then comes another and says to me, "You don't seem to care about the life you led in the palace. When one beautiful lady had done chatting with you, another takes you up, and because they saw you were made much of by them, the cavaliers took pains to honour you, and no sooner were they ill than they sent for you and paid you handsomely and well for the love they had to their ladies." I say to him, "You do not know that when I left court there were no ladies remaining there, for some had left with their husbands and fallen in the family way, and so were spoilt for a season in the way of being ladies; and others for their derelictions and naughty inclinations, and so on, were committed to safe custody in the houses of their fathers; and others, they cut their tails off like civet cats and put them in a cage, and so that they might drop more civet they give them pigeons and egg pies to eat.

And the cavaliers consulted me and paid me well, may such be your life! I tell that, as for that, in reward of the cures I performed on them, they were always teasing me to lend them any little money I might have. The time is past when those who were taken up by the ladies fared well with

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the cavaliers. I may say, indeed, ever since we lost the constable Don Bernardino and the duke of Alba. These were lovers of true type, like heads of bands as it were, and they gave strength and countenance to all in the like case with themselves, and being liberal lovers they assisted with their means all those who could not go forward on account of the expenses incurred, and the thing went on right well from one competing over the other's head, and the ladies were mightily glorified, and those who had approach to them were no way losers. But now it is different, since these two are dead the men are like ancient statues, cavaliers without headpiece; one is really forced to pray for them as for souls in purgatory." After all these Satan comes and says, "When you were at court all the noblemen and grandees paid you much more honour than ever you could have deserved; any small relation you had in the country was respected on your account, a man really took a pride in being your connection. What are you now? Here at Valderas you are about the meanest of the family." The wretch made me weep a potful, for he knew how to carry his edge into the very joint; for we live so in concubinage with this vain glory, that for some small point of honour we are content to spend the most painful life in all the world, and then we lose it; because when it is seen that we are put by, we have such disgraceful things said to us that we buy the honour most dearly when it is least worth out having. Those who don't at all care for it, it comes to them with both hands full. So that in fact I am still much shaken by this encounter. Don't let your lordship fancy that what I here write to you are dreams. It all hath happened to me just as it stands on the paper, excepting only as to the personality of the Evil one. But who could it be but him, judging

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from what I suffered? had it been any good spirit, would he have counselled a living man like me, with all my experience of the court, its perils and all its intricacies, to come back to it once again; could I do so in fact unless I lost my head entirely? I have now put together my books which were dispersed in divers places of my pilgrimage, and now if God so will, your lordship shall see prepared as pretty a scholar ready to make a bolt for the other world as ever heart could wish; indeed, sir, I have hopes that here I shall be a better man than I was in that place, because here there is no opportunity to game, no pride, no envy, no ill-will, nor can I be borne down by others who know much less than me, as I daily experienced at court: and in such case it is hard to be in perfect love with your neighbour, which is a thing more perilous for the soul than some are wont to believe in.

There is one physician of the court, who, when he found anything to speak before the rest, such is his conceit that he fancies there never was the like before; as it is new to him so must it be to all; like the ragged gentry when they manage to get a coat to their back, they fancy there never was seen such a coat and such a fit. Truly he is a man much enamoured of himself and of all he acquires and has; however bad and ugly it may be, it will seem to him wondrous beautiful. Certainly these loves of his are easy loves, he can crack them up just as he choses, and he is never like to find a rival. Such prodigies as these and others not unlike have been better than eyewater to clear my sight, and make plain to me the path of salvation.

From Villadolid xii. of September.

This which I have to tell was nearly drowned in the

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inkstand. I came here certainly intending to buy mares of good breed in this mount of Valderas, for I am amazingly partial to colts (*potros*) of large make, and our Lord has been pleased and Saint Jolian to give me something to start with, a notable present truly, providing me with a first-rate rupture (*potra*): far better colts (*potros*) I say, than such a large melon in the winter time. Not so long since, it was whispered at court that your lordship had such another one. I regret it did not turn out to be true. Such friends as we are, we might very well have been companions in this sorry sort of privilege. Though to her ladyship it might not be agreeable to have such large investment in the breeding stud. I always had it in my mind that some stop should have been put on my winds. May God subdue them: they rush out of the court, bang over the barriers and up the hill like lightning, and then down they go and bury themselves in the twist of the valley. Now can I understand the common malediction of *nufrica de almeida*; when annoyed with any one, he used to say, "an evil sound be your termination." It would be nothing new if my companions, Trias and Alfaro, found their end thus. I do not write more by cause of the great hurry I am in from this enemy. Another day I will stretch out my hand a little longer.

The hands of your lordship kisses
the doctor Villalobos.

The letter exists in the library of the Academia de la Historia, in copy of the sixteenth century in "*Papelas varios de Jesuitas. Tomo* 115, *folios* 36 and 37. *Estante* 15, *graderia* 4. In the fourth page of this letter, otherwise on the back of the second leaf, one reads. "Transcribed, from the letter of the doctor and the admiral."

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At a later date we find this Covos is mentioned in history as one of an *academia* that used to meet at the house of Fernando Cortez, the conqueror of Mexico. After the decease of Covos, it is not unimportant to remark that the "academy" put forth for a subject of dissertation "reflections upon death."

The above letter was evidently written soon after the retirement of Villalobos, which must have followed pretty closely upon the publication of the problemas; contained in this publication is a "Cancion," which sums up in a few touching words all the disappointment and pain he experienced in quitting the scene of his labours. The *cancion* is touchingly beautiful; in sheer despair of doing anything like justice to it, the words of the original are subjoined, there is added a loose and careless paraphrase for those who may know nothing of the Spanish tongue.

Venga ya la dulce muerte,
Con quien libertad se alcanza;
Quédese adios la esperanza
Del bien que se da por suerte.
Quédese adios la fortuna
Con sus hijos y privados,
Quédense con sus cuidados
Y con su vida importuna.
Y pues al fin se convierte
En vanidad la pujanza,
Quédese adios la esperanza
Del bien que se da por suerte.

Then make swift end, oh gentle death,
By which we come at liberty,
Since this world's ways know no pity,
How ill to stay this fleeting breath,
And all that lies in this world's scope,
As children and great store of friends,
And pride of place and human ends,
And ev'ry vain and ling'ring hope,
Commit to God with ev'ry care
Since worth brings no security
And promise but sterility,
Ah, better, better 'tis to die
And be where all the blessed are.

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These strange contrasts in men of genius between extremes of seriousness and raillery are read off from the same scale as variations of feeling in ordinary men; but they catch our interest more readily as exaggerations of a natural type. Whether joy or pity be his aim, our poet is equal to his mission. In the gloss to the *cancion*, which is an address to Death, he says, "And remaining in the court till seventy years of age, I had perfect knowledge of the world's ways. I reasoned with myself thus: I have served until death. Because, of human existence these dregs that remain are not really life, but an experience of pain and suffering which accompany old age; and the work that I have done has not been the cutting up of leather to make sandals for field labourers; but the bringing of healthful restoration to the greatest and highest princes of the earth. And thereto I brought great store of study; many a night I spent in anxious trial without one wink of sleep; many a night with these dry bones of mine stretched out in anxious watching upon the hard bare floor. And their Majesties knowing it as they did, for have they not seen it from day to day, yet never had I a place where I might find shelter in their house; nor have they ever given me food or maintenance for my son, which is the least they might have done. This could scarce have happened but for one of two causes, or may be both are concerned, namely, either that I deserve it, though it appears to me to be otherwise; or perhaps those from whom the informations are received forget me now in the consultations, and remember those who hold more in their hands, my juniors in service and experience. And room there is none for fortune's legacies, there is now no hope of any such, for one there is stoutly rapping at the wall who consents not to my enjoyment of them; now death hath

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undermined all the firmer props of the edifice, and in more than one point the fortress is broke in upon, and stands with yawning breach all open to assault." This must have been written 1542—3. The continuation gives a sad picture of his failing health and spirits, much as is betokened by the *cancion*. It will not be supposed that his life was greatly extended beyond this period; it is a point, however, which is not determined, there being no exact data.

Those biographical notices are much open to doubt which state that he survived up to the year A.D. 1560 no less than those which make him undertake the part of physician to Philip II, who succeeded to the throne A.D. 1556.

We are now arrived at a point where we have to consider the character and merits of Villalobos as author and physician. Of his amazing industry and learning, the *Problemas* and other of his works afford sufficient proof. It is no small honour for him that in compiling the dictionary of the language, his selection and employment of a word was held in the judgment of the academy to give it the stamp of authenticity, and to ensure its perpetuation. We cannot very well evade a consideration of the fault imputed to him of excessive freedom in discourse, which some among his critics would rather have seen subdued within the strict measure of professional decorum. There is no doubt that Villalobos liked his joke, his geniality is redundant everywhere. There were good fellows then in Spain. The national character was not yet chilled into formality, and clouded over by the unhappy character of the Hapsburgh succession. There were men who could see a joke and enjoy it, but the reigning family were of a peculiarly unamiable temper, decorum under their regime

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was carried to the utmost pitch of cruelty and absurdity. It must have been a very severe strain upon the nation, and upon the times in which they lived. The spirit of Villalobos was in direct antagonism to all this. A very wise and excellent man contemporary with Villalobos, and his countryman, the Pope Adrian VI., is reported to have exclaimed, "Let a man be never so good how much depends on the time in which he is born." We must recollect that in those days rude farce was not discredited; the gentlest and brightest of women, the very pride and glory of her sex, the immaculate sister of Francis I. of France, wrote a book of licentious tales very much after the fashion of the Decameron; tried by such a standard, there is little to blame in Villalobos, who in indulging a natural and unaffected vein of humour, is guilty of no scandal, and so far from encouraging immorality is ever prompt to lash it and scourge it into penitence. The Spaniards are a plain-spoken people, they call a spade a spade, such is their habit even now: this poet does not go out of his way to be unpleasant, nor is he often turned from his purpose by a scabrous subject, in one part of the "sumario" he says, "I don't want to soil my page unnecessarily, you can turn to Avicen who will tell you all about it, and yet is not obtrusively minute." In other places we fancy he might be more delicate with little sacrifice to his subject, but we shall always find on reflection that it is not so. It is a common fallacy to be sure that of attributing too much to the influence of the century as if men did not vary in temper, but were all of one piece with the age. Dante, in the thirteenth century, showed as great an abhorrence of impurity as ever was found in mortal man. His phrase, *il tacer e bello*, is resplendent with decorous sentiment; the page of Milton also may be praised as

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chaste and beautiful: but had these two men been placed in a sphere to have indulged their master passions, in all probability it would have gone hard with many a one of their opponents—as it was when Dante had to do with an object of his hatred, even though that object was the Pope he would manage to use a foul expression. Men of the stamp of Villalobos and of Horace are safer than these to deal with and carry much innocence with them. It is, indeed, very questionable whether men gain in social estimation by clothing themselves with a character that is not their own. The falsity soon becomes apparent, and their affectation remarked upon. It requires but small experience of the world to learn how little personal qualities weigh in the distribution of this world's favours. Fortune makes and unmakes as she chooses. The successful holds himself out for imitation. In a general way there is little got by copying. Villalobos all his life long was full of jest and humour. In his dialogue with a great man, he is told, "you may well be a great physician, you are the greatest jester in all the court, and physic is all a farce, therefore you are a great physician." There is an anecdote of him that survives in Spanish story, which is remarkable from the dignity of the two names connected with him in its recital, those of Ferdinand the Catholic of Spain, and the very eminent physician, the Spaniard Torella, whose works are now best known in the field of syphilography, being included in the collection of Luisini. When in the royal presence Villalobos perhaps taking more than his share, Torella got out of temper and chose to say, "I know nothing of these pleasantries, I am doctor and master I., and I leave such things to tomfools." Villalobos was prompt to retort—"Teach me to be rude since you are so great

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a master in it, and I shall then give over these pleasantries."

If we dared to compare Villalobos with Cervantes, though for invention we must give the palm to the latter, and as for wit, where is there wit like his? this at least may be said of Villalobos, his wit does not run off with his judgment, as with Cervantes is sometimes the case, though rarely it is true: for nature put forth her very best to frame Cervantes. In speaking of Villalobos, the following judgment is passed on him by the celebrated writer and critic Senor D. Antonio de Capmani. *Teatro Historico Critico de la Elocuencia Espanola, tom.* 11, *page* 181, *Madrid*, 1786. "In the writings of Villalobos we find frankness even carried to the point of arrogance, he consents to no reservation: he laid open and propagated many truths with freedom and socratic salt; it is that, indeed, which gives chief value to his moral and political discourses, and there is besides the great merit of his pen in the management of his native idiom, when it stood most in need of writers to soften it down and give it the grace and sweetness required in a florid style." In another passage (page 183) he eulogises "the subtle criticism of Villalobos, the lightness of his touch, and more especially his purity and propriety in the use of the Castillian tongue."

"Villalobos," says Senor D. Adolfo de Castro *(Notas al buscapie, E.)*, "was one of the most ingenious persons of his age; wise in medicine and philosophy, good poet, most spicy in his flagellations of human vices. Senor Gil y Zarete, *Man. de lit. tom.* 11, Madrid, 1786, praises his language as extraordinary facile and correct.

We have already said that Ticknor did scant justice to our poet. He, Ticknor, seems to have taken it into his

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head that this writer was unfortunate in the subjects of his pen; that all the philosophy of that age is so much old-world trash. No greater mistake could be made. Such appreciation is flippant and unmerited in the last degree. The writings of Villalobos are full of scientific suggestions, and are brilliant with subtlety of thought. In his work, History of Spanish Literature, London, 1863, Ticknor expresses himself thus, "The style of some portions of these miscellanies are distinguished by more purity and pretensions to dignity than are found in the earlier prose writings, especially by a greater clearness and exactness of expression; occasionally we meet with an idiomatic expression that is very attractive."

Senor Hernandez Morejon (*Historia de la Medicina Espanola*, tom. 11, p. 91) after giving the words of Senor Capmani above quoted, says, "Villalobos uses the Spanish language with so great propriety and good taste that he is regarded as authority in text, being accepted as such in the first edition of the dictionary of the language."

The silence of an author of great merit recently deceased, Senor Chinchilla, in his *Añales Historicos de la Medicina, tom.* 1, page 102, and the following, in all that respects Villalobos is truly a singular omission, when we find authors of small account laden with eulogy we may fairly ask how it happened that a Spanish physician of such distinguished excellence should be overlooked and glossed over in silence. But the time is not perhaps opportune to grapple with these questions.

Lastly, we may here give, as far as translation admits, with somewhat of abbreviation, the discriminative opinion which Dr. B. Montejo has passed upon his works. He attributes to him, in the first place, "an extraordinary quickness of perception; an almost intuitive knowledge

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of subjects submitted to his pen; an unfettered spirit of observation; a rare power of modelling in written language with richness of accessory detail, the suggestion of his every-day experience; a spirit of analysis and comparison which forbade him to accept the dogmatic propositions of his contemporaries without previously submitting them to the strong crucible of his judgment; he stood sufficiently aloof from his fellows for him to consent to their explanation of all in nature from the authenticated doctrines of their predecessors."

"Finally, he had a most complete reliance on the merit and value of his works, in which were enshrined his title to future respect and renown. He had the good fortune to gather into his writings a large number of choice and well-bred words, which have become incorporated into our language," etc. "Villalobos owed much to that university already most deservedly celebrated for the merit and learning of its teachers; it allowed expanse to his natural bent in the direction of knowledge, it allowed him to lay in store that almost fabulous wealth of erudition of which he gave proof in his works. He profited to the full extent by contact with those early restorers of learning and commentators on ancient science who shone so brightly in that far-famed emporium of human knowledge." Dr. Montejo then goes on to say that all his force of genius could not emancipate him wholly from the shackles of the reigning physiology. This, indeed, is no wonder; the task required many more pair of hands than his: and no small share in our deliverance may be attributed to his subject *en chef*.

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ETYMOLOGICAL.

THE section is called etymological, better named descriptive, perhaps, and yet it does not encroach on the "natural history of disease." It is not employed in definition, nor is it biographical, except in the way of fancy, nor biological or physiological, for it keeps the physiologists at arms' length. Let it pass for what it is, we would know what is meant by the bubas. Are they persons, substances, essence, qualities, energies, or potentialities: what are they in *rerum natura!* Are they bred from complexion, combinations or occurrences, are they manufactured by nature's chemistry, did they spring out of the earth as the spiked and bristling harvest from the teeth which Cadmus sowed, or do they stand for causes occult, like the MOTHERS in the second part of Faust? We would not go into an argument kat' ousian, but of this we are perfectly persuaded that the bubas do exist. Some forty or fifty years since such an opinion was scouted as old fashioned and even heretical in the schools, but now it is universally admitted, except by some elderly Scotchman, a relict of the sordid and incredible scepticism that once played the tyrant in auld Reekie. What is the generation of these things? Concerning this there is much dispute. The truth here shall be told without stint. We have read in a learned book that pretended to some acquaintance with Aristotle, what is told by this philosopher concerning the small creatures called moles. Of such, he says, there are some that are born in lineage, that is direct, precisely as the race of man is bred, that is, from father to son, through the passive

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instrumentality of the mother, and other moles there are that are bred by spontaneous generation, being no ways propagated by descent. Now what we wish to say is this: The bubas take after those moles which are bred in continuous succession, and not at all after the nature of those that are produced by spontaneous generation. The bubas are nothing but that which hath been known all along as the French pockes. To men of the nicest discernment they were sometimes mentioned as the "right pockes;" in most countries there was made some distinction of the kind. The Spaniard sometimes called them the "fine bubas." The plural term was employed to designate a particular infirmity. It was named from its most striking feature, being that which gave strong character to it. Thus the pockes, *las bubas*, *le bolle*, expressed this particular exanthem. When first it broke ground in Europe a hundred names it had, and none of these names was quite a fit. We now consent to call it syphilis, a term unmeaning and trivial enough, little likely to give offence to any. Whoever will consult . . . . will find all and everything about it, what we give here is mere decoration, the carving on the edge of the platter, only where he says that the *ficus* of Martial is the very same thing as syphilis, in this we do not go along with him, for the literature of the middle ages up to the time of the coming of the bubas describes the *ficus* very well; but this is a minor blot in that able and intelligent writer. The bubas, be it known, are a disease. The assertion may seem a little rude to men of the highest education. How is it that the élite of our day, just as those of the age of Villalobos, do not like to hear tell of a disease? All with them is physiological deviation, abnormality, effect of accident. With them all disease is unreal, without

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shape or compass or intention; a fibre sprung, a corpuscle displaced, some little derangement or mutiny in the elements, a little defect of control, such as this is their notion of disease. Villalobos, in the course of his problems, shows himself more and more discontented with the ruling physiology of the epoch. What we see, he says, is this: a grain of wheat produces wheat, a horse produces a horse, a lion breeds a lion, and so on. What about these accords and these enmities? How can such things as have been mentioned be bred from opposite qualities in just balance or in varying proportion? Even so, as Villalobos has divined, the bubas do go right on; they belong to the old family of the Indestructibles. Some say they are dying out, some say they had a small beginning; both notions are unwarranted and absurd. They carried all before them in their native country, they were adopted into the dynasty of the gods, and were indeed of the very highest consequence. Now, they have their subjects both black and white, and treat them with even hand. At their humour they are unsparing or humane. They modify radically the organism, but they do not change their type. Our conclusion is nothing short of this—that the bubas are the very bubas, not to be known through physiology, or to be judged of by their neighbours: relations they have none. The bubas are all of one breed, their succession is sure enough if there be any truth in history. They are no *Individuum vagum*, but as sure and certain as anything. They are eminent in the class of diseases, for what are we to say of most of those that appear in the newest nosology; let the physiologist fasten upon these, compared with the fine bubas, the greater part are clouts and shams; the bubas are essentially a disease, they are highly distinguished by contagion, like the class

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we are wont to call specific. Shall we name them a specific disease? Shall we name them an essential disease? Shall we say an exanthema with a short infecting distance? Already we do fear to have gone too far. Whence do the bubas proceed? Is there now a germ theory at present extant? Most assuredly not. Dr. Hughes Bennett has said that he has never seen such germs, which certainly he would have seen were such in nature's realms. Are they, then, parasites, these bubas? Let us be careful of what we say. There was once a certain Hahnemann, part enthusiast, part impostor, a Teuton of vulgar type—one of the Dousterswivel species—who knew his public remarkably well. He revived the heresy of Alkendi "on the force and sympathy of numbers," and robbed both right and left, when he met with a taking suggestion. This man, it would seem, was the first who gave much currency to the notion that cholera was the effect of parasites. As a result, and on this depending, there was sold a vast quantity of camphor. Ever since this time in 1831 the indispensable camphor drops are found in every boudoir. Notwithstanding its loss of prestige from such equivocal support, through mere force of fact and analogy, the theory of parasites, applied as it was to cholera, had sufficient strength of vitality to secure for it more or less the attention of every serious, considerate physician. We have recently realised this dream. The parasites of cholera have been seen, not those of cholera alone, but of ague, gonorrhœa, and a host of other maladies. Two observers of distinction, who do honour to Germany and America, two of the most learned and accurate nations that exist, have let in a flood of light upon these *arcana naturæ*. So vast have been the discoveries, and so opportune, that envy and scepti-

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cism have been at work at an earlier period than ordinarily. Certain persons above all, who have spent all their lives in studying fungi, yet without any remarkable discovery, pretend to be unconvinced, and revolt at the sudden disclosures. So it is the thing hangs yet in a balance, one knows not whether to laugh or to cry. This is put here, that in case one should be told that the bubas have been seen through a microscope, he should withhold his judgment for a while, and be of the last to go into the lobby. How came they to be called the bubas? After the great outbreak in 1494-5, the words seem appropriated to signify no other thing than syphilis. This I say with some reserve, for both in the plural and singular number the original meaning of the word, which is that of push or pock, is never completely lost sight of. "In Egypt," says a certain writer, "there is a good deal of pock (*buba*) and tinea." The word is the same in the Provençal, and soon it became the special term to signify the new malady. In his history of the Indies, Gomarra, an old writer, says: —"The country tried the health of the Spaniards much, and especially the everlasting bubas (*perpetuas bubas*), which they knew nothing of before."—*Hist. Ind., fol.* 14, etc. Again, fol. 17, he says:—"The inhabitants of Hispaniola are all of them bubous (*bubosos*)." These quotations are from the 'Dictionary of the Academy,' A.D. 1726. In the more recent editions of the same, the buba is a breaking out or small raised tumour on the body. Aldrete, an excellent authority on the origin of the Spanish language and romance that is used in Spain, A.D. 1674, says thus much:—"Little doubt that the word is French, and its meaning *pustilla*, and yet, methinks, it should be Greek in its origin." We turn to the French, and we find in the very earliest times a frequent use of

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bube and *bubette*. Ambrose Paré makes use of the words more than once in the sense of vesicle or bladder, *bubes ou vessies*, *petites bubes pleines d'eau*; sometimes also for those of larger size. The brain, he says, is not formed from the blood in the same way as the other *bubes*, *i. e.* the fœtal *ampullæ*. Dalechamp, a French writer of considerable authority, writing in the 16th century, says:—*Boa exponit rubra exanthemata subsequentesque papulas, vulgo la Rougeole*. So the bubas were very commonly called in Spain the measles of the Indies, "*Serampion de las Indias*." The Spaniards used the word Bua or buba, bubas or buuas, the Portuguese call it Bouba. What Aldrete says is this—bubo means pustule, for he says they are disfiguring, they produce upon the face and head pushes (*postillas*), so that the patient becomes covered with blains (*botañas*); but in spite of all this I think it is a Greek word, and is most likely taken from the Greek *boubon*, which signifies an abnormal tumour, especially in the groin. Whether in this conjecture he is right or not we shall consider by and by. He says "the word should be Greek; the Greeks called swellings of the body *boubonas*, and especially the 'encordios principio dellas,' especially so," says he, "the buboes by which these (the *bubas*) begin." Aldrete is here led away by the idea the *bubas* set in or commenced with the bubo, which last in the Spanish language is called *encordios* or *incordios*, for the Spaniards do not employ the word bubo to express a tumour on the groin, as the Greeks did, as the French and other nations do up to the present day. The *boubon* of the Greeks seems to have been a swelling in the legs of cattle, produced by the bite of the water-snake, which snake, by an artifice of speech, was called boa, after the object of its persecution.

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There are many passages in authors which connect the word with venereal affections, among which authors may be named Pliny. In the 'Lexicon Philologicum' of Martinius, Utrecht, 1697, Grævius, page 108. It says—*Bubinare est menstruo mulierum sanguine inquinare.* Lucil. *Hæc te imbubinat. Ita* Fest. *boubion natal. partes verendas.* There is abundance of evidence to show this relevancy, which the use of our word bubo corroborates. But let not the reader be offended when we deliver our opinion that all this learning is wasted, and quite beside the mark; the word *bubas*, as used by the Spaniards, has nothing to do with the Greek at all; the word is French or Provençal in its extraction, signifying nothing more or less than eruption, breaking out or exanthema, push or pock. This is sufficiently shown in the use of the word bubo or bubon, which word is an exaggeration of buba, and is no longer in common use; at the time of the coming of the bubas it by no means signified in Spain a swelling of the groin, the *poulains* of the French, but it stood for buttons on the face, in strict language for tubercles. Buba is the same as *pustilla* or *postilla*, terms which are in some sort interchangeable; but with this difference, perhaps, that *postilla* gives us the idea of something drier than the pustilla (*a pure continendo*); in the postilla, as our rhyme has it, "the moist part disappears, the dry is what we see;" postilla, then, is rather a crust or scab, a dry eruption. In the following poem the eruption is always spoken of as "these postillas," and then we have postillas of sarna, the postillas of asafati; it is quite a generic term, not so much restricted as the word bubas.

As a surname in England, Postle,* in France that of

* In Davila, 'Civil Wars of France,' we read of Captain Mercurio Bua as a very distinguished officer.

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Postil or Postel, survive, and are common enough. From thence we divine that in the sense of eruption it had formerly some currency out of Spain. In old English books and translations it is commonly rendered pustles. Postilla occurs in Cicero and Terence; *quasi postea*, it denotes that which is consecutive. It is now used in the restricted sense of marginal notes, the *apostille* of the French. But, in fact, *postilla* is Spanish when intended to designate an eruption. When introduced in the following translation it has not been with the idea of its being adopted into our language, but because we could not well do without it, except by some sacrifice of character. In the original poem the word eruption is never used, but these *postillas* are named which have "expulsion" on the skin.

There is, indeed, a strong family likeness and a remarkable facility of interchange between words that are in use among the vulgar to characterise skin affections. It is also remarkable that they nearly all of them begin in bl, b, or p—*blain*, *blotch*, *blister*, *bladder*, *blatter*, *bläse*, *button*, *bulla*, *bouille*, *bourgeon*, *borbullon*, *burbuja*, *botor*, *bostela*, *pustula*, *postilla*, *papula*, *pimple*, *ampouille* (*ampla bulla*), *pemphigus*, *pompholix*, *pock*, *push*. They are probably as old words as any in use. Some have thought that the initial b comes from the bubbling of the rain in water, for which the Greeks used the word boubolis as we say patter. So much we have said concerning the word postilla, which forms so prominent a feature in the supplement on the bubas. Notwithstanding their generic character, these terms are used with great definiteness throughout the poem in question.

There is still considerable difficulty in accommodating the terms of ancient dermatology to that of the present day. This is well seen in the work of Leonicenus, the

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first work published upon syphilis; it is little more than a laboured and puzzling treatise on skin disease. He says little, and seems to know little, about the subject in hand. We have followed with small reservation the scale which Dr. Montejo has laid down in his work already quoted. *Bermejura*, so often mentioned in the poem, is the *roseola*, the *erythema*, more superficial forms. *Botor* expresses the papule; *postilla*, eruption in the form of crust or scab; *pustula*, if not interchangeable with the last, expresses a more humid form; *vegiguita* stands for the vesicle, *bubones* mean the tubercles; *secas* are put for kernels, detached glandular swellings—almonds, we call them; *durujones* for gummy deposits, sometimes also for soft nodes; *nodos* for much the same thing, while the ultimate bony hardness is called *dureza*.

3. The reader will here probably exclaim "Oh, dear me! this is extremely dry. Is there nothing to drink after this?" Would to heaven, oh, reader! we could give you of the pure flood of Helicon instead of this muddied and mismanaged streamlet. Very sad, indeed, it is to go through life without amusement. But we wish you to have well planted in your head what the meaning of the word bubas is, and to break you into the use of it. It is "no treatise on the chancre" that is laid before you here. The whole concerns a particular disease, and Villalobos had the sense to call it a disease, and he called it a pestilence too. The disease *par excellence*, it is well known, was the black death. That was the *morbo;* the measles were the *morbilli*, the little disease. Here comes another plague, and they call it bubas. It was entirely natural that the Spaniards should call this disease, whose skin manifestation was so very predominant, by the ready term of bubas. But then may come the question whether they saw farther

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than the symptom, and to what extent the error of the schools, which attributed all to inequality or perversity of complexion, was held in check by popular experience. To learn this it will be best, oh reader! that you should find inserted here, not anything of the doctrinal errors of the epoch, but just a portrait of the bubas from one contemporary with its introduction. Of the writer Gaspar Lucas Hidalgo there is little indeed that is known; he is believed to have been a native of Madrid, and senior in years to Villalobos, born earlier in the fifteenth century. He left an immortal work, the *Dialogos di apacible entendimiento*, from which the following chapter is taken. It contains lessons of vital importance to the understanding of this disease—lessons which are not taught in the theatre, and little inculcated in the schools. "There is nothing," he says, "in the world so excellent but that some people will go far in speaking ill of it." *Nulla tam modesta felicitas est, quæ malignitatis dentes vitare possit.* There is nothing, says Valerio, so perfect and complete as to be proof against the teeth of a backbiter. To that extent has goodness been the sport of evil tongues, whether ignorance be to blame or ill intention (for in the floods that proceed from these good name and honour are full often drowned); to such extent, I say, is this the case that even the Immortal Gods are subject to the same law of destiny, being pelted continually and vexed by a strong artillery of murmurs. A fable, it may be, but one that should be laid to heart by all who will be admonished by it, for everything the Celestials do, their designs and the work of their hands are jeered at and turned to discontent by the carping and irrepressible Momus. Wherever goodness may plant herself, she is never safe from shot of envy; no mailed plate so strong that the teeth of envy

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will not pierce through. And that no exception may be found to a rule so absolute and pernicious, it hath been provided for by the malice of these times that there should be no lack of persons who take on them to malign and also to depreciate the most illustrious infirmity of the bubas. Hear them rail at God and his saints; can any, then, expect to escape? But in order that the eyes of the world may be no longer daubed by deceit, and that all may know the injustice that is done to the forenamed no less than to the noble subjects on whom they may happen to be found, and that from henceforth every one may see on which side the want of candour is, and in order to recover into pure esteem their greatness, their generosity, and nobleness, I shall just put together a few hints, and this lesson is the first that should be read—when the bubas are mentioned in conversation, there is no reason to look blank or go and puke, as if one had let his girdle loose. Why! the very top and perfection of chastity, Diana's self, was she not called Bubastis? So again Ovid says, *Cumque latrator Anubis sanctaque Bubastis;* and Pliny also, lib. v, cap. 9, writes he not of a fair and noble city of Asia which bore the name of Bubastis? Then there was that famous star they name *Bootes*, which is also called *Bubulis*. Well! why should we be squeamish at a word that is used, and consecrate, as it were, to a noble, fair-built city, to a star that is placed in heaven, and to a goddess that is above the heavens? But this is mere trifling with the crust. A name is of little consequence. Let us consider what *principium* and origin they had, and we shall certainly perceive that of all the great treasures Columbus brought with him from the Indies, the chief was these very bubas, for there returned with the fleet certain women as part cargo, by the happy com-

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munication with whom we received this infirmity. Holy is the medicine by which it is cured, the *palo santo*—holy the place where it is treated, *San*—— 'tis the hospital, and for their sins should they not be saints that have it? Let every bubous person do his best to be a saint, and the bubas, sure enough, will take a full share in making him one.

"Who, indeed, can contemplate the extreme mortification there is seen in a bubous person, that particular attenuation of the voice, that lean, withered and sunken countenance, that ruin of complexion, all that break-down of the system, the way in which he creeps about, is it not a very picture of repentance, sufficient indication of sanctity so far as the eye can judge? The plump of cheek, your corpulent and sleepy headed persons, are not admissible into the gymnasium of penitence, no, nor into the academy of the muses, the school of courtly love, nor into the hospital for the bubas. Of the three capital enemies that with fire and blood do rage against the soul, the greatest of them, which is the flesh, the bubas have overcome, making any illicit abuse of it next door to impossible. Is there any one thing that more conduces to the health of the soul than the being hindered of the opportunity to sin? Now, what barrier arises there between man and woman comparable to this holy infirmity? For let an ill-inclined woman be told that the man she is inclined to has the bubas, and she is off like an arrow. Is not that to lose the occasion? One of the surest indications of health in the soul is certainly a grief for one's sins. Well, does not the bubous lament for the prior sins by him committed? Where are there any such frank, open-handed, munificent gentlemen as the bubous are proved to be? They pay as they do speak, through the nose.

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This, too, serves to prove them considerate. When any one has lost by us do we not strive to do him a turn, and make it up to him in some sort of way? Now, the nose suffers much from the bubas, that is why the bubous gentleman doth give it the office of interpreter and ever throws his speech through that doorway. None liberal like these, not a scurvy one amongst them; they know not, in fact, what it means. Though 'tis true it is called *la Pelosa*, the plucked, but that is a mere artifice of language; in fact, we say a parting when there is a departing of the hair, and other things are said by contraries; to a whore we say 'my good lady,' to a negro, 'Snowball;' just so in going along the street, one may hear a passer by exclaim, 'There you go with your hair off,' which means not otherwise than 'God be with you, gallant gentleman.' All other illnesses but this have some opposite that contends with them, but the bubas are at peace with all. In the whole round of the shops there is not one single thing that is at sworn enmity to the bubas, with gift or passion to destroy them, or even to unfix or unseat the fine bubas. Then, again, it is plainly no infirmity, though many in fact do call it so, and all for want of knowing better; for if we consider the word *firmitas*, we shall find how very far indeed the bubas are from not being firm, for where they fasten they stick planted fast as any rock most constant and stable in such a one: they never leave him nor forsake him, but go with him even to the grave, and if they do not follow on to purgatory (in hell there is nothing half so good) *it is that the fires of purgatory could never get rid of the bubas*, or kill them or part them from the frame. Then that which exhibits such firmness, what unreason to call it infirmity. Those who have written of the prince of poets, Homer,

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have sought to do him honour by saying that he drew his origin from many, not a few, islands and cities. How much more of honour is due to this very noble complaint, since not only from islands and cities without end, but also from provinces and kingdoms, there are claims to be allowed and disallowed, and it is ever a subject of dispute. Some have named it the Neapolitan evil, others, again, the French complaint, some call it the sarna of India, and others that of Spain, and some the measles of the Indies, for it was from the Indies we were fated to get this most inappreciable treasure. Others, who are better informed than the rest as to the degree of respect that is due to these most excellent ladies, and do speak of them and treat them too as a thing quite out of common course, unutterable and ineffable, nor think it right that their name should pass the portal of the lips, and so they do not say a bubous person, but such a one as has *them*— Humph! what you wot of. Such, indeed, is the greatness, such the dignity that is seen in the bubas, that they are classed and named after the style of grandees and ecclesiastical dignitaries and kings. We do say the *bubas*, not the *buba*, as in other infirmities and illnesses, for example *tinea*, *sarna*, and such like; we do not say the *tineas*, the *sarnas*, but we say *Las bubas*, etc., and there is nothing lost by courtesy, and especially well-timed and adequate. Then with all this greatness and this majesty, they do carry it right lordly and loftily. I say this, because in many a court there is not success attends a fourth part of the pretensions advanced, after years of servility and waiting it is a chance if one in twenty goes contented. But these noble ladies, to all that apply to their tribunals, do see that each one has justice done him, every suitor gets his own, every applicant is provided for,

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their favours are bestowed promptly and very equally on all. And let no one bring it up against me that the bubas are wont to despoil their servants, and those who wait upon them, for if we discern most nicely we shall see that in this they are most good, bestowing no small grace and benefit, and that we may understand it better it should be known that the leaves of trees, the feathers of birds, the hair of the body and head in man, are the same things proportionately, each according to the capacity and respect of the possessor; for as the leaf to the tree serves for shelter and for ornament, and the feathers for beauty and for clothing to the bird, so is the hair in man and womankind; and the privilege is not small which the generous bubas have procured for the brethren in causing them to moult and drop the covering of hairs, which nature will not shed for them, commending them in this as in other things to human industry and providence. In such wise the bubas are fed of all that is most delicate in the subject, which are, indeed, the finest hair, eyebrows and eyelashes, venerable beards and radiant whiskers.

"It always seemed to me a solid maxim that which tells you that to know any one you must know who their acquaintance are. Let us see with whom they spend their time, and whom they choose for their associates. Take note that these good ladies are always in the very best circles—princes, lords, and cavaliers, all illustrious and worshipful persons. It is these who do have them and run after them. Never coward or flincher is seen with the bubas, but only men of mettle and your fearnoughts. Are they to be discovered with cads, your rascals and common workmen? I tell you no. *Your rustic never so much as once heard of the bubas.* Pitiable ignorance! The ditcher, the harvest-man, the

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ploughman and thresher, are they fit consorts for these high-bred damsels? The bubas do not mix with kitchen wenches and back-yard scullions, but with bizarre and galliard dames who trail silks after them and hearts as they do sweep along; it is they who have the bubas, and deserve them. You are informed, then, that when in the street you raise your cap to such a one or such a one, one half obèisance is offered to the individual, the other half share goes to the bubas. What homage does not the world show to those who possess the art of divining with foreknowledge of things to come. And quite right too, for in this they shine as Gods. But tell me, now, what astrologer or diviner of them all knows more about the next day's weather, and with more certainty, than your bubous; he is kept informed by the intrinsic accidents of the bones and nerves, which are all alive and on the stir, anticipating the changes that are toward. Not only are the bubous diviners, but free and absolute lords, though born and bred of base condition; for all dance attendance on the finely bubous (*al fino buboso*), all wait on his necessities, and he waits on no one, save on God, whom they also fail not to bring to his remembrance, and with this seignory which the bubous exercise over all in their circle and neighbourhood, they go on gaining more and more a respect and service, till at last it is nothing short of adoration, for not only is there a worship for their persons, but even for all utensils devoted to their service, there is a particular cultus and awe engendered; no one ventures to sleep in their bed or to put on any of their clothes, to eat off their plate or to sip of their cup, nor even to sit down upon their chair; for all these things are as sacred vessels, reserved and consecrated to the noble patient. But no wonder, indeed, that the bubas have all this ex-

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cellence attributed to them, for we know of them oh, great prerogative! that the same work, the very same instruments, which nature preferred and put in use to produce that which is its masterpiece, that one of all its creatures which alone looks up to heaven, even while he treads the ground, that is to say man, by this same operation, and with just the same instruments, are engendered the most precious and excellent bubas.

"I speak here of the honoured bubas which are engendered by the self-same act through which man is created, for those which are caused by sitting in draughts I hold to be of no account, not *bubas*, indeed, but *bubillas*; so that the fine and veritable bubas stand on the same footing exactly as man, and we must allow them as excellent parentage; and well may these ladies boast that they come of a noble line. In their life of retirement they keep their state and reception in the secret parts of the palace, their parlour and withdrawing-room lies in the closest recesses and very marrow of the castle. * * *

"In love's *officina* there is nothing bad; what we meet are handsome women, and also most gallant men, discreet arguments, witty rhymes, full purses, and plenteous bubas. Who can speak as they should of the qualities of these glorious ladies, so imperfectly estimated and known; 'tis really a shame to have lived without them, still greater not to have deserved them. Were it not a sin to covet your neighbour's goods, I would look for a qualification somewhere to live for ever in that fraternity: let the will be accepted for the deed."

The personality which *Hidalgo* bestows on his subject shows how strongly impressed were those of his age by the definite character of the disease. There is a timidity on the part of physicians to express this; there could be

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none on the part of a literate. I must find an apology in this for bringing so long an extract before the eyes of the reader. In concluding this introduction, which has stretched out to greater limits than I expected, I am still in doubt what degree of extension should be given to the body of the work. During the past two years I have translated and also commented the dialogues of medicine, as well as those works of Villalobos which treat of natural philosophy; but I fear to make too large a book. May I hope that when this author is better known the public may feel an interest in his works and all that concerns him? And if any expression of mine, in this discourse, shall seem to be too airy for so grave and solemn a subject, it is neither forced nor affected; the natural man peeps out, and cheerfulness has also her rights, which often lie long in abeyance amid the tortures of this uneasy age. In the following poem it has been my endeavour to follow the metre as well as the sense of the original with the greatest possible exactness. I was not, indeed, ignorant that Mr. Frere has written somewhat on the metres of the Spanish language, but I have ventured to trust my own ear as a sufficient guide, and never once have I sacrificed sense to harmony or refined upon the meaning of Villalobos.

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By the licentiate de Villalobos. On the contagious and accursed bubas.

HISTORY AND MEDICINE.

I.

WHAT time ruled those princes wise and glorious,
How great and loved and how allied is here no need [to tell,
Blest of God, and made by Him so victorious,
In the blason of their power so notorious,
The kings don Fernando and donna Isabel;
Through all the whole universe their fame now was spread,
Where men and laws are found, and aught of culture springs,
Now all of blighting arrogance was captive led;
At this time all their land in peace was swayed,
All tyrants were destroyed, whether vassals or kings.

II.

EVEN thus as they dwelt in fair and stately show,
In the which they continue wherever they are found,
Having God for their aid, and the people's love also,
With great store of blessings in the world below,
And far more of promise in the realms beyond.
Being then in Madrid at that time and season,

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For new kind of sin as soon we shall relate,
There came forth from God a gen'ral malison,
That fell on all the land, each province and nation,
All countries that we know or where we penetrate.

III.

IT was a pestilence ne'er to be found at all
In verse or in prose, in science or in story,
So evil and perverse and cruel past control,
Exceedingly contagious, and in filth so prodigal,
So strong to hold its own, there is little got of glory;
And it makes one dark in feature and obscure in countenance,
Hunchback'd and indisposed, and seldom much at ease,
And it makes one pained and crippled in such sort as never was,
A scoundrel sort of thing, which also doth commence
In the rascalliest place that a man has.

IV.

He states the opinion of theologians as to the supervention of this malady.

THEOLOGIANS pretend the cause of it doth lie
In certain new-found sins that are rife in Christendom.
Oh! Providence divine, oh! judgment from on high!
Which ever hast in store a perfect penalty.
Howe'er we go astray, our folly is brought home.
Out of heaven Thou hast seen all this schism and dissension,
In thy sons and thy servants, both churchmen and lay,
How for mere opinion's sake and the lust of contention,
With shrewd swelling taunts and vehement intention,
They make appeal to arms in disorderly array.

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V.

He speaks in the person of God.

SINCE now ye turn aside from fighting the good fight
Of faith against the infidel at my behest,
And those brave faculties which I thought right
To furnish you withal are used to my despite,
With much of scandal to the church and joy to the unblest,
An angel I will send, with skill to strike and lame
Each faculty, your waywardness I shall chastise. [shame,
Nor part that stirs, nor arm nor limb can 'scape the touch of
For all aggression impotent, disfurnished, dull, and tame,
And rack'd with cruel throes anon in very fearful wise.

VI.

He replies to an objection that might be made to the foregoing.

AND in seeing those go free that have headed the rout,
Don't go to believe that my messenger shall spare,
That he neither sees nor cares what each is about,
For he strikes as a' finds, both within and without,
And full well he knows who the ill intentioned are.
When in Egypt God sent such a one to destroy
His enemies' first-born, with terrible amends
For cruelty to Israel, He saved from annoy
The houses of the Jewish folk, by causing his envoy
To know by a clear sign the doorposts of his friends.

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VII.

Second reply, and he concludes.

AND although as for me I read not the mystery
Why sheep are made to pay for the shepherd's naughtiness,
As seen in that great prophet who wrote the psaltery,
Half the nation has to die for his shocking adultery,
And my lord all the while goes free from sickness;
But seeing this complaint 'mong Christian folk prevail,
And how that Church troubles have got the dominion,
And the Schism to be new no less than what they ail,
We must know the two alike to judge the matter well,
I confirm as being good the aforesaid opinion.

VIII.

Second theological opinion.

BUT some to luxury, and all of wanton sense,
To which the world is giv'n do refer the same.
The ailment, say they, is a just and proper sentence;
According to the sin so is the repentance,
And the part that suffers most is the part most to blame.
And this seems borne out by a passage in Scripture,
Chapter XII, Genesis, where we read of Egypt's king,
Pharaoh, engrossed by excellence of feature
In Sarah. God struck him in his nature
With this same disease, or some such other thing.

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IX.

He approves.

AND thus you'll surely see that those who do them keep
From sharing in this sin do not become its drudge;
But those who press the cup of pleasure to the lip,
Do barely as by power of some miracle escape,
Through righteous judgment of an all-righteous Judge.
And so it is indeed the men have turned so chaste,
They dare now draw near to any woman, as we see.
O mystery of God! that all are so straight-laced
And humbly penitent wherein they have transgress'd,
Because we could not do it in a moderate degree.

X.

He cites the opinion of the astrologers as to the advent of this malady.

ASTROLOGERS say by their computation
It is due to conjunction of Saturn and Mars,
For Saturn he is lord of the adust passion,
And Mars of the members of generation,
From which of this infirmity the first proceeding was;
But if so be that Mars is tormented in his place
By that restless fellow Saturn, his determined adversary,
How with Venus then and Mars; if we seek our solace
In the using of their acts, must we study heaven's face,
To see if Saturn's there? it behoves us to be wary.

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XI.

He gives the opinion of the physicians about the aforesaid.

PHYSICIANS say the secret of its power
In melancholy humour and salt phlegm doth lie,
Which occasion in all organs what obstructions do occur,
Proceeding from a mighty distemperature
Of the liver, which is turned to hot and dry;
And this from something baneful in the air is bred,
And also from bad habits and from sustenance,
And joined along with this the aforementioned;
Even so the mischief works, and gets so far ahead,
That neither cure nor regimen can check its insolence.

XII.

He sets forth the opinion of a certain doctor as to the esse and number of these postillas.

AVERY learned doctor is at pains to prove
That these eruptions are none else than saphatí,*
The same that Avicenna in his fourth treats of,
And here we shall explain what first in him did move
The opinion which he has of their identity.
He says that in these all one matter is discerned
With that in saphati so well known to us before,
That melancholy humour, very gross and highly burned,
And adust and admixed with salt phlegm is here concerned,
Producing on the skin such very gross *botor*.

* Saphatí or Saphâti. Arabic word indifferently accented.

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XIII.

He proceeds.

THOSE seen in saphati, he says, are quite like these,
Small in size, and very fixed and divided as to site,
And being red in both, the colour too agrees
With other things in common which one plainly sees,
In Avicen his fourth, if we do read aright.
And since, argues he, these certainly are not
Either lepra or sarna or any other kind
Of all the whole set which on the skin are thrown out,
That they are saphati is quite beyond all doubt,
For beside the saphati what other can you find?

XIV.

He is repugnant to that opinion for many reasons.

WITH all homage due to his learning and urbanity,
That these are saphati is very far from sure,
Such difference we find in materiality,
They differ, too, in form and very much in property,
In site and in colour, and they differ in their cure.
Now, the first may be proved, as it were, by rule and line,
For putrescent with pestilential,
In speaking of humours we never should conjoin,
And fevers classed as humoral we certainly define
From all of pest in form and in material.

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XV.

He lays down the minor whence he infers and concludes.

THE pustles in question, he fully admits,
Come of air that is corrupt and partake of pestilence,
But saphati at all times and seasons one meets,
For it's bred of the humours, from no infection, certes,
And the spots are not considered to proceed from thence.
But if he make rejoinder to this reasoning,
That also the saphati is participant of pest,
Since time doth ill allow of so much questioning,
Thus much we shall concede, the nature of the thing
Is not well shown in science, nor made fully manifest.

XVI.

Second reason and argument.

WE'LL try to make it plain by other argument,
What difference in passion and in property we meet,
Brings difference in form, out of such accident,
The form is builded up and follows consequent,
Essentially 'tis so, and so 'tis made complete;
But, indeed, a very great difference is here,
From that same saphati in property and passions,
For very strong pains along with these occur
In all of the joints, and these do first appear
In the member which makes the generations.

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XVII.

He concludes, and gives a corollary.

NOW, who ever saw such a thing in the saphati,
No author that I know of has described it so at all,
This argument cannot prove other than weighty,
All judgment as to form must needs appear petty,
That concludes not on the difference as essential.
But if as to essence and form we decide
That these two kinds of pustule are so very different,
By what is then affirmed already 'tis implied
That in their properties they do not coincide,
And either of these proofs are very apparent.

XVIII.

How they differ on their site and number.

HOW they differ in their site and in their amount,
By what our senses teach doth very well appear,
We know that saphati itself doth chiefly plant
Upon the face and head, and there it doth torment,
But these are seen both high and low and everywhere.
The pustles in saphati are of less account and scanty,
And when it's seen above it's rarely down below,
But with these undescribed eruptions you may see
How next to infinite on every side they be,
And this is what experience doth plainly show.

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XIX.

How they differ in colour and cure.

WE know in his work Avicenna has said,
The pustles in saphati are bright red it is true,
And these may be white or they may be red,
Or linnet-brown, or green, or palish blue, like lead,
Or ash-colour'd, or black, or yellow in their hue.
Item, of diseases it is pretty well known
If they differ in their cure in themselves they disagree,
But with those of which we treat the doctor sure will own
What he mentions for their cure is not in unison
With the rules of Avicenna for the cure of saphati.

XX.

He sets forth another argument against the said opinion.

ITEM, I should argue in this manner about it,
Grant then that saphati stands for them in this place,
It would seem that Avicenna hath most loosely writ,
How comes it in the fourth that the master should omit
All notice of those tubercles that come upon the face,
Through which it is by scarlet all so tinctured o'er,
In very evil guise, and so tuberculated,
Much as preceding leprosy a thousand times and more
As broad enough to sense we recognised before,
And yet by Avicenna to be nothing stated.

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XXI.

He goes on.

WHATEVER plea you have to maintain and to state,
A face thickset with tubercles is the asaphati,
Much rather may we confidently predicate,
In aught from Avicen, such writer ne'er would treat
Concerning these same pustles so defectively.
What is felt in all the joints of pain and heaviness,
To pustles such as these he never once assigns,
In legs and in the arms that cruel helplessness,
And the lumps and the bumps, the harass and hardness,
And the wounds that we perceive upon the shins.

XXII.

He concludes, and commences a new opinion.

AS to how it first comes on he makes no remark
About the virile sex, nor that of womankind,
Nor tells of the complexion turning frightfully dark,
And many things beside he names not in his work,
By which so many proofs of their difference I find;
But if that Avicenna hath designed them anywhere,
Which I shall not affirm, nor do assent thereto,
In the chapter upon sarna they would probably appear,
To be of that same species in our vernacular
Scarce other than in Latin called the *mal muerto*.

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XXIII.

Of the agreement which that scabies has with these eruptions.

IT corresponds with them in its material,
For of gross and adust humours the infirmity is bred,
No less than these this sarna too is chronical,
Nor in any special seat does this itself instal,
And very gross botores are therein displayed;
'Tis also many hued as told of these before,
From varying materies of which it's constituted,
Distress with grave pains and disablement occur
In parts superior and parts inferior
Not otherwise than to the bubas was imputed.

XXIV.

The said doctor quotes two arguments that make against this opinion.

THE doctor afore mentioned will not have it so,
From two points of difference that these two have got,
Whereby their ill accordance he pretends to show,
And first, he says, in scabies the species we know,
To be pruriginous and in the other not.
And secondly they differ from the scabies because
Of humour that is thinner and more penetrative,
As grosser far in scabies you see it cause
A vast array of pustules and he chiefly draws
The force of his objection from this motive.

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XXV.

He answers the first motive.

NOW first as to the itching which he finds not in the passion,
It comes not to the species of scabies perforce,
But rather it is found to come from association
With humours that are salt and that bring mordication,
Where such do not occur it is not pruriginous.
And in the new eruptions just the same we descry,
If choler in admixtion or salt phlegm at all doth go
There is itching that nought serves to pacify,
Such patients we see rasping continually,
That this is no ways false good sense might serve to show.

XXVI.

He replies to the second motive or difficulty and concludes.

AND this is my reply to motive the second,
In all about the species he's wrong in his premiss,
For 'tis the species on which I most have reckoned,
And surely it is gross if there's any to be found,
And from any other one it is different in this;
These eruptions far more than any others are gross
And the cure is lengthened out in far worse degree,
From thick and heavy humours which the same compose,
And these indeed are not so very different from those,
And the nature of the thing with my statement doth agree.

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XXVII.

He begins to speak of the passion and the name it should have.

AND having now declared on what my view is based,
All ground of altercation I would readily abjure,
And whether with sarna it is well or ill placed,
Concerning the disease with so much prefaced,
Let us speak of the name, the passion and the cure.
And in my poor conceit as a fitting name for this
Which coming out of sin shows exceeding cruelty,
Sarna egypciaca will not be amiss,
For it's loathsome and perverse just as sarna is
And it's surely sent by God as pain and penalty.

XXVIII.

Of the definition of the infirmity called sarna egypciaca.

THE *sarna egypciaca* aforesaid
On all the whole skin and the face we observe,
And here a vast foulness of eruption is displayed,
And with it pain of joint that is felt very bad
And measureless siccidity in vein and nerve,
From humours adust and salt phlegm that works therein,
Hence matter on parts proximate not ambulative
When cast by the expulsive virtue to the skin,
With such materia dry tumours supervene
Not but that in certain cases it is ulcerative.

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XXIX.

The causes that bring this complaint, and first of the universal and equivocal.

THE cause first in order that brings this complaint
Is hurtful impression of bodies celestial,
Which produces in the air an infectious taint,
Corruption in our flesh is thereon consequent
If thereunto concur some causes terrestrial.
A very complex harm is the primal cause thereof,
And constellations of unfortunate planets,
And this from astrology derives its proof,
By voice of all well versed in it the thing is plain enough
Our art itself to theirs in this subordinates.

XXX.

Of causes inferior and extrinsic.

THE cause here below is the taint that's in the air,
And all kind of nourishment that's melancholic,
And all that serves to breed salt pituita,
As the use of hung beef, and fish and *oruga*
And such like as pulse and onion and garlic.
All commerce with the sex to the point of enervation,
As we read in Avicen predisposes one to pest,
While gluttony and quarreling and inebriation
And also cold and drought and the lack of recreation
All render human creatures to the same infest.

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XXXI.

Of causes antecedent and conjoint.

THE cause interior is the vast quantity
Of humours adust in the liver and veins,
With very salt phlegm and with such humidity
As lets the gross stuff run with keen subtlety,
In any foreign part where it supervenes.
It may chance that the species of humour is but one,
Or many blent together are concerned in it,
We find them to be oftener commingled than alone,
As when choler and salt phlegm go in unison,
'Tis then no good is got from cold or from heat.

XXXII.

He proceeds, and expounds the cause of the pain in the joints.

THE expulsive virtue furthermore is causative, [skin,
By which the inward noisomeness is shot upon the
Assisted by some error in th' assimilative,
The conjoint cause is matter excoriative, [seen,
Which brings all the obstructions and the pustles that are
The reason why we find in the joints that dolour,
As highly singular we shall do well to note,
Inasmuch as a grave doubt is here provided for,
Of the same no mention made our excellent doctor,
Though certainly a thing which he was bound to quote.

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XXXIII.

The causes of the pain in the joints.

WHILE this materia, of which I said anon,
It had to be expelled, is teeming in the veins,
No dolour yet occurs until it settles down
In one or other spot to which it has been thrown,
Which then imposthumates, and so ensue the pains.
No sooner have the veins succeeded in delivering
This matter to the members all, they cannot it endure,
To ease themselves of its fret and its sting,
A share of it they on the weaker members fling,
And some upon the skin to discharge it do procure.

XXXIV.

He goes on.

AND if these find the strength on the skin to cast it forth,
Just there where 'tis driv'n the eruption appears,
If not cast upon the skin, why then they prove their worth
On some less noble part, which may refuse the scathe
When cast on it, but otherwise the villany adheres:
Even so from post to post, it is forced to make halt,
While seeking for some member which is not so strong as it;
The joint's a feeble structure, very open to assault,
And it's cold and it's hollow, and it's round without a fault,
Just fit to grasp and hold the stuff which therein finds a seat.

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XXXV.

He goes on, and concludes.

THE joint, too, lies wide of the parts that are principal,
Of spirit and heat, it little contains,
The motion and wear in the same are continual,
Thus the humour's drawn in, and very material
Is that maintenance which such part maintains.
Item, it is hard, and the pores are locked beside,
And this is a barrier to all ventilation,
With nerve and with cord it is specially supplied,
And so the sense of touch is highly fortified,
Which accounts for all the aches in this passion.

XXXVI.

The causes why this passion commences on the parts of shame.

THE reason why at the beginning there is shown
This passion on the shameful parts, it is because
Produced upon the groins, from the liver there are thrown
Encordios, and these do spit anon
The venom to these valued friends of ours;
And to receive the same indeed they are not slow,
Being very tender flesh, and much prone to alteration,
When not spit in, it comes because there has to flow
The urine through their midst, and from the liver so
Descends corrosive humour that is cause of ulceration.

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XXXVII.

He goes on to state why the ailment shows itself in these organs many days before its coming.

WITH this kind of ailment in the very first place,
The liver is distempered in the sense of dry and hot,
And gross and adust humours grow therein apace,
(But in the first beginning this is not so much the case)
And the strength to void it forth the liver will have got.
By all this noisome stuff diseased and much tormented,
Through its conduits forthwith some more or less it chases,
And this ere any portion in the veins is spread,
Thus 'tis that the passion on these members is presented
Many days before it yet hath appeared in other places.

XXXVIII.

Of the symptoms which are shown when the infirmity is about to appear.

ON such member when you find a buba or small sore,
Above all when it is painless, and when hard
With dolour of the head, the face much clouded o'er,
The shoulders much bowed down, sleep absent more and more,
What there is of it much broken, by short madness marr'd;
Around lips and eyelids a dark rim,
In all he does he is laggard and afflicted,
And all that his eye rests on is confused and dim,
With aught of sense to guide you by attending to this scheme,
The coming of the sarna of Egypt may be predicted.

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XXXIX.

Of the symptoms when it is present.

BUT oh! when a black eruption supervenes,
Then comes in the joints a throe that is terrible,
'Tis first in the shoulders that the same begins,
Next in the knees and it falls into the shins,
The pain that you have in their web is unendurable,
And in the trooping over of the humour to the same,
Destroying it, for far more subtle is its heat,
A firm kind of tumour there its action doth proclaim,
On the head and on the forehead too, no less than in them,
From out of this gross humour knots and kernels you get.

XL.

The signs when it comes from blood that is adust.

IF adustion of a humour so malign doth lie
In the blood, there is very much of heat with these;
The palms and the soles of the feet are hot and dry,
With a highly sanguine tint, and they burn incessantly,
And itching, too, resides in the materies;
The pain is strong, but also far from permanent,
And ever it gets worse advancing toward dawn,
Within a hot material is evermore crescent,
On the forehead a strong redness with some heat is evident;
Their shoulders wring with aches, they are crushed and over-
[borne.

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XLI.

The signs when it comes of choler that's adust.

IF choler is concerned there is scanty relief,
With far more of heat, vivid pain, but not durable,
Crowded pustules on the face are an ample source of grief,
The hands and the feet are plagued beyond belief
By hot stinging blisters with a torment that is terrible;
Burning crusts in the palms and soles of the feet,
With a yellow cast of bubas, and some too of reddish kind,
Abundant though minute, which consume the parts they eat,
In choleric complexion nothing short of complete,
And the pain comes on worst toward noon you will find.

XLII.

Of the signs when it comes from phlegm that is adust.

BUT if the adustion should be in salt phlegm,
There is not the same heat, and the pain is not so bad;
The pustles here are large, and some itching attends them,
With roughness and a flakiness that might be called extreme,
As to colour, they are not unlike metallic lead.
If here the phlegm is white, a threefold frigidity [down;
Encircles chest and head, and the strength is much weigh'd
The crusts partake of white, with very much humidity,
The pains stick by him long, the heat's of less degree;
And here 'tis toward midnight that the pain comes on.

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XLIII.

Of the signs when it comes from melancholy that is adust.

BUT if the adustion should chance to have its place
In the melancholy humour, they are cold and dry;
They are large, and itching is not here the case,
And with these is the worst deformity of face,
As to tediousness of cure, they all others far outvie;
They are bulky, but the pain shows more lenity,
And scabrous, though at first they come out very small,
Toward night-time they begin to be more watery,
With these there is huge sorrow and anxiety,
The skin is always dry, and the flesh is lean withal.

XLIV.

Of the signs when it comes from a mixture of adust humours.

BUT if the adustion should happen to be
Of many kinds of humour that are here congregated,
By mixing of the signs to find how they agree,
From what is here compiled one very well may see
What kinds of humour meet therein or are mated.
And most of times these crops are wont to happen thus,
In many kinds of humour the infirmity is laid,
Sometimes it will be phlegm, with blood highly gross,
Sometimes it will be choler with another kind of cross,
In the which from cold and heat there comes not any aid.

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XLV.

Of the cure; and first he states divers opinions about it, all of which he contradicts.

WHEN they found that this complaint so firmly held its ground,
Very evil as it was, and so full of haughtiness,
And when from good or ill no kind of change was found,
The people of that day it did mightily confound,
And e'en the literate were in doubt about the case;
And some took the notion that to cram and to swell
The stomach and the guts with all that came to table
Was the very quickest way to make the patient well;
That it lowered them too much to be denied each meal
Some sweet and toothsome bit that was thought objectionable.

XLVI.

He condemns this opinion and another, which he recites.

THEY said evacuation and phlebotomia not;
Should be done upon the wine-jug, and upon the person
"Let him have from Medina that tincture so clear,
From Coca, Arenas, and Andalusia,"
To such among drunkards the crown I allot.
But others, to the paths of learning more akin,
Have said evacuation is the better course,
With purging and bleeding and lots of medicine,
And the withholding food, all which are termed divine;
But this opinion, too, is quite erroneous.

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XLVII.

He gives a notable reason against eradicative purges.

IN dealing with the humour by the plan of purging
In dryness and in heat the liver aggravates, [much,
Whence the mischief is redoubled, as the signs avouch,
And the nature of the matter that's concerned is such
That it parts not, but it shifts, and then it indurates.
From any part or member such a humour to scour,
It needs must find a passage through the smallest set of veins,
And onward so as each doth join one larger than before.
These drive it on the liver, if they only have the power;
And this on to the stomach, which the purging sustains.

XLVIII.

He goes on and concludes against this opinion.

LET this physician say where is the likelihood [in,
Of tearing out the humour from the part it's planted
And how by vein invisible it e'er should find its road,
And climb the reverse way of the nutritive blood,
Which is water on th' ascent; but if not made more thin,
What force could drive a humour not one whit attenuated,
So gluey, and so wholly of a nature that obstructs,
Through such very narrow passages to be filtrated,
Which always we have found choked with blood and obturated,
In the path which to all portions of the liver conducts.

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XLIX.

He tells of another mode of treatment, that by ointment to the joints, and this, too, he controverts.

BUT others took in hand the treatment of this passion,
To whom as skilled in saddlery we bow with much [respect,
With mercury and lard they use an infrication,
Which brings unto the pain a great mitigation.
By sinister means this their object they effect.
The quicksilver, being mortificative,
Doth only serve to numb and to stupefy;
The fat soothes a skin over-sensitive,
And the mercury is made to be more penetrative,
In killing all sensation the great benefit doth lie.

L.

He continues, and destroys another opinion as to cure.

YOU'LL observe that in the part where the pain goes away
From the entrance of the salve, no strength at all remains,
But when nature a renewal to the mischief doth purvey,
Through the animal spirit, in due course of night and day,
The feeling then returns, and then come back the pains.
But others sweat and strike it through the pores of the skin;
This they do in the very first commencement of the ill,
You remove by this, 'tis said, a humour wondrous thin,
Which makes a kind of oven where the gross stuff nestles in,
For to purge it hence is found to be impossible.

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LI.

He lays down the cure according to the rule and means most warranted by reason and experience.

THE cure that's given here as what I deem the best
Is taken from our authors the most valued and discreet;
And firstly this grey humour I endeavour to digest,
From gross to turn it light in parts therewith infest,
And then apply the right evacuants to it.
And first you have to learn if 'tis blood the trouble makes,
For then you use phlebotomy in the basilic vein,
And note which shoulder 'tis, which most the pains do vex,
To bleed the arm that's opposite; if both are wrung with aches,
On both sides bleed, so following our master Avicen.

LII.

He goes on.

THE fumiter syrup you will then let him have,
For it's like to serve him featly where the humours are adust,
And also for salt phlegm it is superlative,
Two ounces for a dose, unless with it you give
The epithymum syrup where the subject is robust,
As potent to expel all humours that are gross;
But always you'll give more of the forementioned than of this;
With ev'ry two of syrup add some water of bugloss,
And palomine made warm by heat three ounces for a dose,
Or whey, if from choler or from blood the trouble is.

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LIII.

Of glysters.

AND lavements he should use that are appropriate,
For the which some anise, centaury, and fennel should [be ta'en,
And chamomile and carthamus and violet,
And also epithymum and mixed prunes you get,
And raisins stoned, like portions each, and put them in a pan;
And when they are well boiled and strained aright
Add cassia fistula an ounce and a half,
One ounce of benedicta and of hiera with it,
And the honey, salt, and common oil as requisite,
'Tis loosening, evacuant, remedial, and safe.

LIV.

Of the minorative to be taken by the mouth.

THIS done for eight days' term consecutively,
He should then take this decoction as a minorative.
Of yellow mirabolans an ounce let there be,
And also some fine chebulic and Indian, all three,
To boil with these of plums two ounces you will have,
To which some epithymum and some lavender you add,
And of tamarinds an ounce and a half thereunto,
Of palomine and raisins one ounce each should be had,
With three pounds of water the decoction will be made,
And keep it on the fire till you've wasted two.

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LV.

OF the cassia fistula cleansed you will diffuse
A single ounce in six of what doth go before;
And this in the prime of the morning he should use,
And more than a few times he may repeat the dose,
For in cleansing and in loosening I count it sure;
And then he should continue with the syrups as above,
Till something of digestion in the humour is apparent,
Employing, too, the glysters we made mention of;
And when he has persisted with the method long enough,
Purge the humour with such briskness as the case may warrant.

LVI.

Of the signs of digestion.

DIGESTION in the humour by these signs you may know,
When pain and sleeplessness are more bearable,
The bubas cease to come, and the liver, too,
Is not so burnt with heat, he is not so sinking now,
The palms and the bubas and the soles begin to peel;
The urine no longer is so thin and so crude,
Of good character and white is the hypostasis,
The egestion that comes from him, too, is regular and good,
In the colour of his countenance the clearness is renewed,
To get the case on further you give some such pill as this.

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LVII.

Of the eradicative purge.

TAKE by weight fifteen grains of the Indian pill,
And with it thirty grains of the pill of palomine,
Ten of spica and of mastych, which you pound awhile
With ten of white light-weighing hermodactyl;
All this beat up together is a grand medicine.
And when with your syrup you have rounded the pill mass,
Cut from it seven pills to serve him for the nonce;
In using them be guided by the strength he has,
And evermore be careful not to purge him to excess.
At midnight give so many as may suit for once.

LVIII.

Another form of purge.

THE stronger form of purge should be in this wise.
Of chebulic, mirabolans, and of the dark ones too,
And raisins, certain ounces take as may suffice;
And senna leaves and lavender of any sort that's nice,
Some ounces of the same—the best alone will do;
To these you put six drachms of polypodium,
And then of palomine may be added ounces four,
And five of the choicest eupatorium;
Then four pints of whey you will pour on them,
Boil and waste two thirds, as directed once before.

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LIX.

WHEN this is right well strained to it there will be put
An ounce of epithymum, and you heat it without [flame;
Bring on to boil, and let it be well mashed about,
Boil and strain, and carefully diffuse throughout
Of the best black hellebore a single drachm,
Of cassia fistula an ounce clarified,
Of agaric half a drachm; and to make yet more sure,
If you'd have it to be excellently fortified,
Put in just half a drachm of well rectified
Armenian stone, as used by Eben Messué.

LX.

How the theriaca is to be taken, and about another form of minorative.

AND when you shall appear to have rooted up the [humour,
Make sure of any dregs the mass of it outlasting
By giving each third day *theriaca major*
Administered in whey, for then it is brisker,
The size of a good filbert to be taken fasting.
And while some small part remains undigested,
Of this gross evil humour, and the man turns away
From the cassia fistula cloyed and disgusted,
Epithymum half a drachm may be substituted
In lieu of the other, to be given in goat's whey.

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LXI.

To correct the liver.

PAY attention to the liver as the field or forcing-ground
For production of a humour so adust and so malign,
In its treatment much advantage from some ointments will be found,
For which the rose or violet we safely shall propound,
That of ferment or the salve we call the sandaline:
And having now complied with each previous injunction,
And followed it quite punctual and regular,
We turn our thoughts next to local means in conjunction,
With the bubas everywhere we practise an inunction,
And what we offer here is very singular.

LXII.

Ointment for the bubas.

OF climia of metals that of silver use alone,
With ceruse and litharge, chalcantum and aloes,
And quicksilver, like weights to be together thrown,
Well rubb'd and stirr'd with lard, and you add anon,
Some oil of oleander and some vinegar as follows.
The solids in a mortar should be pounded thoroughly,
And then some of the oil you let fall in it,
Rub well and add some vinegar and work again briskly,
And then instil some oil, and so alternately
Until the right consistence of the salve you hit.

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LXIII.

Another ointment of a stronger sort.

IF something shall seem needed of a character more fine,
And stronger than the last, take both the arsenics
And bright yellow sulphur, with which you will combine
The black hellebore and the resin of pine,
All of these in the like proportion you mix;
With garlic ash rub, and after you will add
Some incense and myrrh, aloes and Negilla;
Hog's lard and kill'd quicksilver next should be had,
And oil, juice of lemon, or cider instead.
Make your ointment and lay it upon the pustilla.

LXIV.

Of plasters for the joints.

AND let him have a plaster for the joints as well
Of stercor and butter of cow with honey made;
And if, as by conjecture you may shrewdly tell,
All slighter means of cure are pretty sure to fail,
To one of stronger sort recourse should be had;
And for this take ounces four of turpentine,
And of Alexandrine nitre also ounces four,
Of gum euphorbium, a famous medicine,
Three drachms or thereabouts should enter in,
And half a pound of fænugreek reduced to flour;

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LXV.

AND to the same six drachms you join of orris root,
And furthermore five drachms of gum oppoponax,
With this of olive oil six ounces may be put,
And then you may make bold an ointment to have got
Which by the help of God is sov'reign for the aches.
But if you should conclude that a stronger form will suit,
Then make a freer use of the euphorbium,
With oil that we obtain from the unriper fruit,
And gums are to be added of a pungent sort, to wit
The gums ammoniacum and bdellium.

LXVI.

AND what else you need of plaster and ointment
Consult Avicenna in Fen twenty-two,
Where, dealing at large of every ailment
That comes to the joints, he speaks of the treatment;
Go learn for yourself as a scholar should do.
And if so be the pain is most execrably bad,
As mostly will occur from humours that are heating,
Your narcotic ointments will then come to aid,
Such you'll find in Avicen at the chapter aforesaid;
His remedies are good, and here they seem most fitting.

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LXVII.

Of baths.

AND let him have baths, and in its decline
Some herbs in a decoction may be added thereunto ;
Althæa and the mallows, caltrops and palomine,
And roses and violets as very sweet and fine,
And anise and parsley and fennel and rue.
For nine or ten days a daily bath let him have,
And after fling himself inside his bed to sweat,
If punctually done, of this I do believe
He will not wholly miss his purpose to achieve,
For 'tis the surest way a speedy cure to get.

LXVIII.

For relief of the spleen and also for wounds.

YOU'LL try to ascertain if there's hardness in the spleen,
For pain about the part only late we may observe,
And if 'tis so indeed your skill may soon be seen,
For deoppilation you may safely glean
From our chapter on that member a most potent salve.
And if it should so hap that the skin forms a sore,
'Tis well that a good surgeon should attend thereunto,
And let him be advised of what has gone before ;
So, knowing well the cause, he's like to know the cure,
And then expect the best of what his hand can do.

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LXIX.

To cure the hardnesses and also to direct the regimen.

AND each lumpy swelling you'll treat as a knot,
And as any sclerotic hard kind of imposthume,
You'll soften and free it before you resort
To resolutive means laid on to the part,
As in dealing with such was ever our custom.
Most strict should he be in all of regimen,
For this beyond all doubt is of his cure the corner-stone;
From all trashy food he should utterly abstain,
And keep from loose thoughts and especially from women,
From passion and rage, vexation and moan.

LXX.

Of appropriate food.

AND let him have kid and poultry and veal
And partridge and pheasant, and if they be fresh,
Either pigeon or dove may furnish a meal,
And except they be gross, any small birds as well,
And good wether mutton well covered with flesh,
And the yellow of eggs just taken from the nest,
And fresh-water fish, the tiny scaly tribes,
Those trout a span long I reckon of the best,
And any kind of food that is easy to digest,
And suchlike things to eat as the text describes.

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LXXI.

He goes on, and so ends.

AND what wine he drinks should be red and well lowered
With chalybeate water, for it's very singular;
And don't let him always be fagged and o'erpowered,
Nor lost in idleness with mind unoccupied,
In the order of his meals let them stand as they are.
And sleep during the day should scarce be allowed,
And tippling and collations he should absolutely shun,
And never may he gorge himself at any time with food,
Although what's put before him may be very good,
And a walk before his meals is highly opportune.

LXXII.

FINIS.

NOW honour be to thee and praise, most noble lord,
Who hast kept a candle burning with a very faulty wick,
Who in such gloom of night such splendour dost afford,
Also that here a sum of such great worth is stor'd
In phrase both juvenile and also barbaric.
And now by your enlightenment and favour it is done,
What promise may I offer for a benefit so great,
Except that as your liegeman I am reckoned on
In life and in death, in pleasure and in moan,
And to your name and service here the work I dedicate.

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LXXIII.

PERMIT not the approach of envy and of spite,
Which challenge all that's bad, and all that's good bedim,
In physic are so many of the literate
Who as between themselves do ever bark and bite,
And yet they will combine to tear you limb from limb;
Already one appealed to hath confirmed in a dispute
This argument against me most maliciously,
That an equal complexion punctual and absolute
Of medicine is what he could not well deny,
Which here is deemed most false and held in no repute.

LXXIV.

WITH a most unequal judge it happ'd to me again
To give me some annoy he stoutly did contend,
That the very smallest body might be split in twain,
And its natural *esse* and its form would still remain,
The which for most unfounded you may apprehend.
And since the learned tribe in science all complete
In their great love for backbiting do twist it as they like,
To your saintly clemency the whole I do commit
So all these lying tongues will learn to be discreet,
And even the most venomous will be afraid to strike.

THE END OF THE SUMARIO.

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NOTES ON THE POEM.

TITLE OR HEADING.—"On the contagious and accursed bubas." The words pestiferous and contagious, if not precisely synonyms, are very nearly so. In another place our author speaks of the "pestiferous and contagious vices of the court." The general idea of pestilence in the middle ages was this: sometimes a general tendency to pestilence was supposed, the air was then said to be pestilent. Different diseases of a pestilent character would surge up, and this condition was in general terms called pestilence; or sometimes only one form of pestilence was remarkable, or only one was made the subject of observation and discussion; this was then called "particular pestilence." Most likely the persuasion that the bubas was a wholly contagious disorder gained more and more on Villalobos as he proceeded in his work. First he calls them the pestiferous *buuas*, a popular and recognised title; and after, in a more special heading, he adds the epithet "contagious and accursed." Finally, when the book is going through the press, and half or so of the copies are struck off, he suppresses the term pestiferous in the title-page, leaving to the book for bare title, "*El sumario de la medecina*," and to the

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bubas the character of "contagious and accursed." In his 3rd stanza he says, the pestilence is extraordinarily contagious, and that it begins on the private parts; in the 5th the same idea is apparent; in the 8th yet more so, the sinning part is said to be the suffering part; in the 9th and 22nd stanzas the relations of the sexes are insisted on; in the 10th and 16th the disease is said to originate on the parts of generation; in the 15th the secondary eruptions are mentioned as recognised sources of infection; in the 14th stanza pestilential matter is sharply distinguished from putrescent, and from simply humoral discharges. It is only when Villalobos comes under the dominion of the reigning physiology that he assigns to the complaint any possible origin other than contagious. Errors in diet were supposed to account for syphilis by those who were looked to in the first instance for an explanation, just as now, among the population of India, the smallpox is supposed to depend on the fruit season and large consumption of the mangoes.

STANZA I.—The kings. Their proper style. Guicciardini calls them *i ré cattolici* and Florian *les rois époux*.

Line 8. "Now all tyrannical pride was subdued." Beside the Mahomedan kings, the petty despots of the country were dealt with. The turbulent and haughty spirit of the nobility and gentry, *señores de orca y cuchillo*, little kings each in their sphere, it was ever the policy of their Majesties to diminish (see *Mariana*, *Hist. de Esp.*, lib. 28, chap. xii), no less than the insubordination in the populace. The period indicated is between the years 1493 and 1495,

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for only in the year 1493 terminated the continual struggle between the French and Catalans in the Pyrenean passes for the possession of Cerdagne and Rousillon, and in 1495 the Catholic kings were engaged in war, though beyond the borders of the peninsula.

STANZA II.—"Where we penetrate." The island of Haiti or Hispaniola and the new discoveries of Spain are included in this phrase.

STANZA III.—This is one of the finest and most important stanzas in the poem. Francesco Lopez here displays his truly marvellous facility of expressing in a few select words the fruit of his observation. We offer it in Spanish:

Fue una pestilencia no vista jamas
en metro ni en prosa ni en sciencia ni estoria
muy mala y perversa y cruel sin compas
muy contagiosa y muy suzia en demas
muy brava y con quien no se alcanza vitoria
laqual haze al hombre indispuesto y gibado
laqual en mancar y doler tiene estremos
laqual escurece el color aclarado
es muy gran vellaca asi a comenzado
por el mas vellaco lugar que tenemos.

The complaint was never *seen* in books. Fracastorius uses the same expression, *nec longa ulli per sæcula visum*, but here the phrase is more explicit and assertive—no, never, *jamas*, not at any time. It is wretched or malign, perverse, immeasurably cruel, very contagious, loathsome, strong or braggart, and very unyielding. The word "indisposed" is extraordinarily well chosen to express the

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malaise and ineptitude which is felt in the breeding of the complaint; this is more dwelt on in Stanza xxxviii.

Line 7. The stoop in the shoulders must have been remarkable in the gallant volunteer soldiers of the period; on the strength of this alone Oviedo is almost sure that the Commander Mossen Pedro Margarite, on his return from Haiti, is actually suffering from the bubas. Disablement (*mancar*) has a signification which extends from the merest disinclination to the most extreme paralysis; this term might even include wounds or maiming, as where a recruit maims his hand by a gunshot or other means, the word *mancar* is then used, he disables himself; but in this poem, over and over again, it denotes a certain impotency or disability, a stupidity or sluggishness of the limbs in response to the dictates of the will; *manqueza* is a minor term, a paresis. The clearness of complexion is lost in this infirmity; it has yielded to a murky tint. A pestilence so malicious and sordid he apostrophises as a dog of a complaint, or rather as the female for that, and consistently with its other base features, it begins, he says, on the parts of shame, an assertion which is made by him without stint, exception, or reserve.

STANZA IV.—At this time schism was raising its head in Christian Europe. Savonarola was laying the foundation of a new sect at Florence, the *Piagnoni*. Scepticism was rampant in Italy; the world was stirred to new modes of thought, the gradual swelling of the storm before the Reformation. The writings of Erasmus at a period a little subsequent are full of lamentations over this wretched state of affairs.

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STANZA V.—War with the infidel; combination against the Turkish power was a great motor principle in that age; a popular cry, well worked by popes and princes for their benefit, but it nerved every arm at *Lepanto*. The *potentiæ*, virtues or faculties mentioned in this stanza are the very same described in the dialogues. The subtle wit contained in the 8th line will not escape the reader's notice. A general impotency is ascribed to the disease as one of its most marked properties; the words "disfurnished, dull and tame" are not in the original.

STANZAS VII, VIII, AND IX.—"I confirm as good the said opinion." Let no one see in this on the part of our poet a weak apprehension. In default of correct data Villalobos seems to have accepted that view which has most reason to support it. We hesitate not to say that the argument of the theologians was far more consistent than that of the physicians of the epoch; and yet in confirming it as good, Villalobos does not seem to have pledged himself unreservedly to this first opinion, for in the heading to Stanza IX. he "approves," that is to say to a certain extent he confirms the arguments which attribute the disease to luxury. With much sagacity, however, he prefers an exceptional cause for so exceptional a malady. The tendency toward heresy, the *cizaña*, he says, is new; so is this malady which prevails among Christians. So much cannot be said of luxury, which, with its various depravities and distortions from the path of nature, has ever existed, and at times far worse than in his generation was the case. Villalobos was not the only physician of that day who yielded to the arguments of the theo-

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logians. We shall see presently that others adhered firmly to a second theological opinion, viz., that which attributed the disease to luxury. As to Sarah, whether Pharaoh was most smitten with her name or person may, perhaps, never be known: it is sure that he was far gone in *amor hereos*. For myself I fully agree with the poet Coleridge in one of his loftiest flights, "I love the name of Sarah." This name was never unfamiliar to the Spaniards, but sometimes was corrupted by them. See *Don Quixote*, 'Jervis' Translation,' vol. i, chap. iv, and the Don's expostulation "between Sarah and Sarna is a difference." The Spanish proverb "as old as the itch" (*sarna*) was originally "as old as Sarah." There is another rhymed proverb which says "that hunger in students is "as old as sarna," quære Sarah. The view which attributes the disease to luxury is that which has most conciliated opinion in the present day: there is now, however, no reference made to the interposition of the Godhead, in proportion as the opinion has lost religious sanction, and is stripped of its best claim to respect, it is clung to with a more vehement and unreasoning fervour. This opinion does not seem to have satisfied our poet. After bestowing upon it a fair amount of attention he turns away with a happy stroke of ridicule. We deliver here below the opinion of a learned physician on this subject, which shows that this opinion of the theologians had much sway at that period and subsequently; it is extracted from the *Castigationes Pharmacopolarum* of Symphorianus Campeggius, Lib. iv, fol. cxii, Lugdinum A.D. 1530. The chapter *de*

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pudendagra quam nostri Neopolitanum morbum, Ital. vero Gallicum vocant.

"The Parthenopeian disease," he says, "or pudendagra is a disease that first appears on the privates and then on the rest of the body with pustles, and for the most part it enters on occupation with excessive pain. It is a very grave disease which covers the whole face, excepting indeed the eyes, descending to the neck, and down to the chest and hands, with a foul furfur such as we see outside the vine. Some call it *milium*, others *lichen*, others *mentagra*, but we say it should be reckoned among the epidemics such as are seen to come and go among the people; one argument for which is that it proceeds from heaven's wrath. It is delivered by the saintly Fathers, who wrote through the inspiration of God, that men oppressed by this world's trials, are in various ways subject to God's correcting hand: there is many a one who is taken to task by his Maker in order that through penitence he may expiate the soils of a flagitious life: for sin, incurred through imprudence, may yet be cleared away through repentance which leads us to heaven's gate. As is known, many of us are so foolish as to attend but little to salvation; but God in his incomparable goodness breaks in of a sudden on the somnolence and lethargy of such, dispels their security by some strong shift and recovers them to his fold with blows. In every law as yet which God has provided for mankind he has contrived a punishment for luxury.

"When subject to natural law, forgetful full oft of the precepts of their fathers, men set themselves to follow luxury; whatever inclination now and then

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they may have shown for virtue's cause, this served to whet their zeal in a double sense for wickedness. Against such God's wrath was declared. It may be recollected that the Angels of God, for so Josephus relates, held conversation with the daughters of men, and thence begat injurious sons, confident and boastful of their strength, such as those termed Giants by the Greeks, given up to the perpetration of all evil. Not only the malice of such was justly condemned by the Almighty, but the race of man destroyed as well, for only Noah was saved. In the same way God angered at the Sodomites and destroyed them on account of luxury, exterminating all they had and making their country barren. Under the Mosaic dispensation we read of the prophet Balaam who, after the benediction wherewith he blessed the children of Israel, gave Balak that wicked counsel whereby the people were seduced to the embraces of Midianitish women; a terrible expiation followed. For the law of the Gentiles; she who built Babylon, Semiramis, and also was conqueror of India, pray, was she not slain by her son to whom she had given herself as wife? What then are we to think? If under the Mosaic law and the superstitious sect of the Gentiles the vice of luxury was certainly reproved, would it be otherwise under Christian law? We lie under God's guidance and correction, we are opportunely scourged by his hand, and so are driven to repentance, which wipes away the stain of sin. Well, then! in a certain year of Grace Charles VIII, being at that time King of France, God our father ever intent upon our profit, even as an eagle trains her eaglets for the sky, so was He with us in His

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dealings—French, Italians, German, British, Danes, Poles, Pannonians, and Spaniards—that He might lift all up and raise them above the touch of sordid joys, and also that through penitence they might expiate the stains of an ungoverned existence, He subjected them to this *pudendagra* as retribution for luxury. For no other sin than this all the Hebrew folk were carried into captivity to be long inhabitants of a foreign land, in Egypt under the Pharaohs, in Babylon under the Assyrian kings. Just the same the Christians in the reign of Charles VIII, the King of France, were hammered and bruised unto death by the assaults of this *pudendagra*, made subject to the affliction of this arthritic, worse than Jobean or Egyptian scabies, and to the filings and raspings of repentance, even that they might be cleansed from the taint of luxury. Without doubt it is an awful disease. Cruel wounds on the body without, and within nothing short of rottenness (*interius corrupta*). In such scattered wise *(passim)*, as with this disease, the multitude of Egypt was affected, as Josephus relates. Not a few of the younger physicians have persuaded themselves that this is the *lichen* of the Greeks, into which error it has been asserted that I too had fallen by no less a person than the learned Leonard Fuchs. Nothing of the kind. I have always taught concerning this disease that it proceeded from the anger of God, just the same as the plagues of Egypt and the scabies of Job were sent; not a bit through power exerted by the stars as astrologers do vainly dream, nor from any distemperature of the air as physicians fondly persuade themselves. Wherefore those are quite beside the mark who call this disease

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lichen as Leonicenus does, or *impetigo* as Leonard Fuchs erroneously concludes, or *mentagra* as others have asserted. And if, which I by no means believe or admit, I may have seemed somewhere to say that the French disease is *lichen*, never was it once in my mind to say that the French disease or *pudendagra* always existed and belonged to all time; on the contrary, I have always expressed myself that it was a new disease, attributable solely to the anger of God and to the antients utterly unknown. It is an unconvertible thing that every race and people, who in former ages were committed to the vice of luxury, became victims to some new disease, or else perished away basely by some slower visitation (*languore*) brought upon them."

STANZA X.—To bring the reader well up to this point a little prolixity may be excused. He must know, then, that the knowledge of medicine in Western Europe was transmitted to us from the schools of Greece and Alexandria, through the medium of the Arabs, who received the same from the Nestorian Christians, and the Jews. Mesopotamia, a land infected with superstition, was the cradle of the Jewish race, and the Nestorians had their chief establishments in this land. Both were infected with the current Eastern superstitions; a belief in magic, amulets, necromancy, astrology, were common to both classes of transcribers. Appealing as it did to the fancy, nothing could compete with astrology in its fascinations for the half-informed intellect. There were seven planets, seven metals known. Each of the last was called after the name of a planet; gold was *Sol*, silver *Luna*, and so on. The

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same of the days of the week and other things. At the epoch with which we have to do the astrologers, as men of the world and of experience, found that this disease began in the secret parts; all popular experience confirmed this view. Their argument was wholly retrospective. Mars with red beams presided over the pleasures of love; Saturn was lord of choler and the adust passion. Bring, then, these stars into conjunction, and so you have the bubas. "According to their principles," says Villalobos, "the causes thereof are not secret." This explanation of theirs, which was intended to satisfy the vulgar, will appear less audacious when we consider the large part which physiologists of that age allowed to the sun in all generative processes; the semen, indeed, was produced by the operation of the sun on the choice blood in the heart; nor was the moon without influence of this sort on the lower organisations.

Line 3. Adust passion. Melancholy humour underwent corruption in the veins, which was held to be of three sorts; one of these changes was when putrefying by the force of a strange heat it turned, as it were, to ashes, and so became adust and biting. Villalobos, in one of his Problems, speaking of the action of the sun on the salt ocean, has something like a criticism on such conclusion.

Line 5. "From which in the beginning this ailment hath come," *id est*, from the parts of generation.

Line 10. *Mal compañero*. Saturn seems always to have been a bad comrade, *mauvais coucheur*, as the French say.

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STANZA XI.—As we have seen, the theologians and astrologers looked to main facts, though overlaid by them with a vast deal of nonsense. Both classes of men referred the disease to sexual intercourse as its path of preference through all times succeeding. With the physicians it was different; however they might stand in doubt when they met, perchance, with facts that were irreconcileable with their arguments, it did not become them to be astonished like the multitude, or to admit that aught could intervene which was disjunct from the reigning physiology and unprovided for by it. This is a picture of the physician for all ages, that is, of the rawer type. The text of Aristotle and Galen, as interpreted by the schoolmen, with the experience of Bagdad and Cordova—all these mixed in an alembic produced a clear distillate of doctrine that was then orthodox at Salamanca. The quaternion was the key to all questions of philosophy. We find, then, in this stanza no reference made to the true starting-point of the disease. The infirmity comes from "abundance" of melancholy humour and salt phlegm, which occasions stoppage (*estança*) in *all* the members of the frame, *totius substantiæ*. We may notice here how, by a happy distribution of his subject, Villalobos avoids committing himself personally to these opinions. With the modesty which is befitting his youth, he brings the fruit of his observation into submission to the doctrines of the day, and no doubt he thought to give his work additional ornament by investing it with a scientific form. As a fruit of simple observation it would scarce have been so well received; still, he is not irrecoverably pledged to the teaching of his school.

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Line 4. Distemperature. The division of disease at this time was threefold, viz. into distemperature, ill conformation, and solution of continuity. Distemperature is a disease of similar parts, dissenting and changed from their proper temperature; according to the quaternion this may happen from excess of one quality which is fourfold, or of two which is also fourfold: in this particular instance it arises from excess of hot and dry. On such distemperature is "founded" or depends the "abundance" of melancholy humour and salt phlegm which constitute the complaint; and this distemperature is founded or depends on a condition of the atmosphere which he calls damned or defective (dañado), and on bad habits, diet, etc., and so there is created a dannum within the frame, which is also termed malice, mischief, villainy; and this specific principle, virus or venom, as we call it now, has causes which are akin to those which produce country fever or any other pestilence. Such was the teaching of the physicians. The aforesaid, the aforementioned, are lawyer-like phrases which betray the immaturity of the language in respect to literature and poetic form. With this stanza there seems brought to an end a natural division of the poem, which, however, is made to hang together remarkably well; already we feel that we know something of the subject.

STANZA XII.—Another *mise en scène*. A certain doctor comes in very opportunely for exposition of the subject. Perhaps an artifice of the poet, but more likely a real and *bonâ fide* writer on syphilis, whom we conjecture to have been a German. He serves wonderfully well as a foil to Villalobos, and not

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seldom has the best of the argument. The character and amount of the eruption is first discussed. The humour is mixed, which is a proper species of humour; it is burned (*quemado*), a term I retain, though we generally say scorched, etc., etc. *Botor* is papule.

STANZA XIII, line 2.—The description of asafata in Avicenna. *Asafati incipiens est bothor parvæ, fixæ, leves, divisæ in enumeratione locorum, deinde exulcerantur ulceribus crustosis et sunt ad rubedinem declives*, etc., much the same in Leonicenus.

STANZA XIV.—"By rule and norma;" the argument is close and forcible.

STANZA XV.—Partake of pestilence, *ser pestilencias*, literally, are pestilences, *i. e.* sources of infection. "Saphati," he says, "is always happening, or may come at any time." The exposition is as follows:—"These spots or *postillas*, or secondaries, are infectious, while those of saphati never had that reputation; but if you say that, notwithstanding they are counted innocent, the spots of saphati are in reality contagious: there is hardly time to fight that question, because, though I am convinced myself, it is a thing which has not been thoroughly sifted and made incontrovertible in the schools." We are landed by Villalobos at the very point where we were taken up by William Boeck of Christiania, in his visit to London some two years since. By his experimental mode of inquiry, we then learnt to test the difference between various venereal and cutaneous discharges. It is certain that the doctor who figures in this poem was to a certain extent right, though in his

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argument he was too refined. Apart from a parasitic constitution, certain forms of *impetigo*, *eczema*, *tinea*, are, to a limited extent, transmissible by means of contact or inoculation; they pass through a short reproductive series, but it is only very exceptionally that some of them, or some forms of them, exhibit that remarkable tenacity and vigour of reproduction which is displayed in the secretion from venereal sores. Such exceptional forms were the mentagra and other local affections of the Roman world; one such has been recently described by a modern physician, Dr. Tilbury Fox, as a species of impetigo. No doubt there are more local contagions *in rerum natura*, if industry were employed in propagating them. A disease locally contagious is not, necessarily or by implication, syphilis.

STANZA XVI.—The form follows essentially from the property and passion. It may really be doubted whether passion is not a better word than complaint, but the term property we had rather dispense with. The language is obsolete. We are here reminded of the words of our pleasant Butler—

> *He found First Matter all undrest,*
> *He caught her naked all alone,*
> *Before one rag of Form was on.*

STANZA XVII.—Beginning with the adverb "essentially," he creeps on the adjective, and so to the substantive. According to Galen, the true source of indication is the essence of the malady. The word saphati is accented by Villalobos sometimes on the last syllable, sometimes on the last but one.

STANZA XVIII.—"Saphati," he says, "is tormenting;

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it torments the part, etc.; it is also of less account and proportions than the bubas.

STANZA XIX.—Though he makes no particular mention here of the shade which we term most distinctive, namely, that which resembles a slice of ham, or a coppery tinge, he enumerates many varieties of colour, among the rest the redness or roseola, *con bermejor*.

STANZA XX.—This stanza presents some difficulty from the excessive laconism and antiquated turn that it has. He adopts this argument:—"If," he says, "Avicenna intended these in his description of asafati (if these are included in that description), how is it he says nothing about those very strongly marked red stains and tubercles we see now in the face? for such we miss entirely in Avicenna's description of asafati, which speaks of small insignificant papules." And to show more plainly that it is tubercle that he means, and nothing else, Villalobos further says, "such tubercles, you know, as very frequently precede lepra, ugly, flaming, and projecting." At this time lepra was a very ordinary disease in Spain, and every one knew what this appearance was.

STANZA XXI.—"If you have made up your minds to say that the bubas are saphati, you have a right to say so, but don't ask us to believe that our master would ever have left such a poor description of this notable disease as we find in his record of asaphati; that would be too absurd. Is it likely that Avicenna would have overlooked the pain in the joints, and other important concomitant symptoms?" The argument is a clincher. This last half of the stanza or

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quintilla is truly admirable. We give it in the original:

pues nel no approprio âgl dolor y graveza
quen todas junturas dan estas postillas
ni puso en los braços y piernas manqueza
ni los durujones dolor y dureza
y llagas que acuden a las espinillas.

The dolor and sense of weight which the pustles bring with them or bestow in all and every joint, the paresis or failure of power in the limbs. The fourth line is surpassing; the half stanza is well closed by the fifth.

STANZA XXII.—The complexion of the face *turns* black, or towards black, *negro y fiero*, so dark as to be frightful, a very marked change; *el color aclarado*, the clear complexion is clouded o'er. The subject is then dismissed, though he has many other proofs of their "very great difference." It is mainly resolved by the pains in the limbs, which do not exist in the saphati, to which the doctor makes no allusion. Ten stanzas have been devoted to this head of diagnosis; he gives four more to its relations with sarna, which is rendered the more necessary from the name he prefers for the complaint. In respect to its diagnosis from *formica*, *lichen*, *milium*, etc., our author is wholly silent.

STANZA XXIII.—Once more we have to do with the humoral theory. Villalobos says their constituent material is similar, and both have large *botores*, which fact, with their abundance, is proof of the grossness of the humour, as the pungency of its adustion. These external characters falling under the evidence of the senses establish sufficiently the interior com-

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position of the morbid principle. There are other points of resemblance found, which are more unexpected, and seem of bolder comparison. In the eighth line Villalobos says that accompanying the scabies there is failure of power, distress, and grave pains, *manquezas*, *angustias y graves dolores*, just as described in the bubas. No doubt that scabies was well studied in that day, the better, perhaps, from there having been no syphilis to distract attention from it. It was also a most common complaint, this *malum mortuum*. We cannot here avoid calling to mind the story told by Fracastor, in his book *De contagionibus*, etc. "A surgeon," says this author, "had an old book of receipts, one of which was for a *psora* with large-sized eruption and arthritic pains." It is just such a *psora* which Villalobos here describes, a scabies with large-sized eruption, *muy gruessos botores*, and pains like those of the bubas, *graves dolores*. The existence of this receipt, then, presents nothing uncommon, and is no proof of the existence of the bubas prior to the year 1493.

STANZA XXIV.—That the humour was gross in scabies was not contested; in these the doctor says it is thin and penetrative.

STANZA XXV.—In this scabies, says Villalobos, you do not always have *pruritus* or mordication, an observation which is perfectly just, and some modern dermatologists of fame and repute have gone so far as to say that the presence of the parasite is not that which causes mordication; most certain it is that this symptom is much under the dominion of diet. If to a man with common itch you give garlic and onions or other such things *(los deste cuento)*, you drive him

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wild and mad with suffering and irritation. Now it was just such diet as this which, in the time of Villalobos, was said to create salt phlegm. Villalobos asserts that syphilitic eruptions are sometimes pruriginous; this is perfectly true, whether from herpetic complication or other cause the fact is undeniable. Villalobos probably witnessed some such case, rare though it be; but here is the secret of the matter. "Good sense, *el senso*, he explains, would persuade us that it is not otherwise." The sense of Villalobos was here dominated by the opinion of the schools; it was little else than prejudice. Thus it was that he was led to perceive and even to expect this symptom of *pruritus* with the *bubas* oftener than we have found it since; what he mistook for pruritus was a minor irritation, and heat far short of absolute torment.

STANZA XXVI.—A continuation of the argument drawn from humoral pathology. He denies the premiss or antecedent, viz., that the matter is thinner. He insists that the new disease consists of heavy, thick matters, which in the language of the day are secondary qualities; the matter, in fact, is gross enough; the bubas are much slower in getting well than any other eruptions, *en cura y remedios son muy mas tardias*, so that these (*aquestas de agora*) are not different from those of the itch, and my position, he says, is good, the "truth is on my side, I claim to be right." He has then established a certain resemblance to sarna. He does not say one word about the bubas getting well with the same remedies. See Stanza XIX.

STANZA XXVII.—What is worthy of remark is that in this stanza, third line, for the first and only time

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he calls it a disease (*morbo*). He says, "men should call it *sarna egypciaca*."

STANZA XXVIII.—A fine description. He mentions here that the singular limitation of this complaint to the part on which it has fallen; it does not encroach upon the neighbouring structures; it is not ambulative to near parts, *no es ambulativa por sus derredores*. The same character of limitation is discerned in the primary sore; on the other hand, in describing *formica*, he says of one kind that it is ambulative.

STANZA XXIX.—From the 29th stanza to the 37th inclusive, our author deals with the etiology of the complaint, conforming himself to the medical ideas of that age. The study is equally interesting as to what is erroneous and obsolete therein, or what is incontrovertible and pathologically correct. It will be well to pay strict attention here to the headings of the several stanzas.

Line 3. An infectious taint, *dañada infecion*; the air breeds corruption in our bodies if they are "disposed to it."

Line 7. *Infortunos planetas*. The noun *infortuna* means the sinister influence of the stars; doubtless the adjective infortuno, unfortunate, is here used in the sense of sinister or unfriendly, corresponding to the Latin word *infaustus*, as in Tasso's fine simile of a man in strong rage:

Qual con le chiome sanguinose orrende
Splender cometa suol per l'aria adusta,
Che i regni muta e i fieri morbi adduce
A purpurei tyranni infausta luce;

STANZA XXX.—Spoilt or pestilent air, and everything that is melancholy maintenance, *i.e.* sustenance, food

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that fosters and provokes the melancholy humour which is imperfect blood, as fish, onions, *e deste cuento*, and all that kind of thing, as dry and even fresh beef, venison, old cheese, Oruga, *Eruca*, the herb rocket used in salads and some dishes. Much feeding, too, increases the melancholy humour, for the phlegmatic in constitution are generally huge feeders, with a dog-like hunger possessing them. So too of little recreation, *poco plazer;* when a man is defrauded of his fair amount of pleasure, the inward heat, deprived of its nourishment, faints and grows dull, and so gross and drowsy humours increase in the body; and besides these, anger and fury and drought are things which breed choler and cause adustion of the humours. Such are the inferior or extrinsic causes; we now proceed to the antecedent and conjoint.

STANZA XXXI.—The internal or interior cause is divided into antecedent and conjoint. The first does not make a disease, but goes near to make one; so humours copiously flowing, or ready to flow to a part, are antecedent causes of disease. The conjoint cause is that which plays the most considerable part, and which, therefore, should chiefly arrest our attention. It is that which more absolutely causes the disease, so immediately joined in affinity to it, that the disease being present it is present, being absent it is absent. The antecedent cause is the abundance or accumulation of certain humours in the veins; these humours which induce the bubas are sometimes blood, sometimes choler, sometimes phlegm, sometimes melancholy, sometimes a union or combination of these. The species has a strongly modifying effect on the symptoms and course of the bubas. According to

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the quaternion, with its false and winning simplicity, the bare fact of a remedy curing a disease developed in bilious or choleric subjects, would stamp that remedy as being cold; on the contrary, a remedy would be called hot which produced the same happy effect on a phlegmatic constitution of body. Then, again, the extrinsic, exterior, or non-organic causes that produced these ailments, had a perfect correlation with the above principles of the quaternion, and were classified accordingly. If the ailment lay essentially in phlegmatic humour, phlegm being the cold element in the organism, the extrinsic cause producing the ailment was held to be of cold nature. If essentially the choleric humour produced the malady, that choler on which depended the organic heat, the extrinsic cause, would then be of hot nature. And the treatment was founded upon this; cold was opposed to heat, and heat to cold. It is apparent, however, that a difficulty would arise with the mixed elements into which there entered both cold and heat: so in the treatment when choler and salt phlegm were in union, "no good was got from cold or from heat." The explanation will serve for as much as the same character as is found in Stanzas XLIV, LXII, and LXXIII.

STANZA XXXII.—The expulsive virtue is also an antecedent cause; that which helps to produce or conduces to the complaint is some error in the assimilative process. This assists the expulsive virtue as an antecedent cause. We must refer to the introduction, where we have two stanzas on the four humidities, and to the dialogues for an explanation of the digestive processes; especially of that ulti-

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mate digestion which takes place in the member itself, whereby its particular portions absorb and are satiated each with the particular juices and nourishment that is appropriate to it, adapting this to its wants and repairing its waste. The modern doctrine of independent cell life, and that other one of cell territories, lies but little beyond this, if they are not rather included in it. It is so perfectly consistent with our modern notions that we cannot be surprised when we see him suggesting as a cause, imperfection and derangement in the digestive process which is carried on in every part of the frame. Such a modification would call into undue and abnormal activity the expulsive *potentia*, and constitute it an antecedent and interior cause.

It now remains to be considered what is the conjoint cause of the bubas—that which is to take the place of a specific principle, that which actually causes the disease. This, according to Villalobos, is a certain excoriative matter or materia furnished by a highly subtle heat, which harries, breaks, or tramples down the parts which it invades; it clogs the organs, and is the cause internally of stoppages, swellings, and congestions, abnormal deposits and desiccated impenetrable foci for the reception of morbid material, becoming fast implanted, as it were, and rooted in the structures; when thrown upon the skin it leaves a stain; its trace is more or less fugacious or wholly persistent; it corrodes the mucous tracts; falling on the genitals or discharged upon them, a small wound is apt to result, or a detachment of the epidermis with infiltration; it is called a damnum, a villainy, a mischief. It is bred

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in the liver, which is the member which plays the chief part in sanguification, which presides over digestion, and regulates all the chief operations of animal existence, hence this organ would be most obnoxious to the operation of exterior causes; and here we must remark by the way on the very well-known fact that the lesion of the genitals does not follow immediately on any degree of contact with the source of the infection, but that a certain period or interval is maintained, say a fortnight as middle term, though often very much prolonged, before there is any manifestation upon the genital organs. Villalobos had to account for this interval or period of incubation, a puzzling fact to him as to us. He does it in such manner as we have seen. These parts, he thinks, are secondarily affected.

In the last half of this stanza the author does but indicate his intention to explain the osteocopic pains or pains in joints, as he terms them; their existence has cleared up the major doubt or greatest point of uncertainty, viz. the identity of the complaint with the saphati; he accuses the doctor of concealment and want of candour in endeavouring to choke (*callar*) this symptom altogether.

STANZA XXXIII.—This matter which is expelled or which "has to be expelled," for that is how he characterises it, gives no kind of pain till it sticks somewhere and imposthumates, *i. e.* causes congestion or swelling; and presently, when the veins have cast this matter on to the "members" or parts of the body, these hate it, they resent it, they enrage and fret at its damage and malice (*de su daño y malicia despechan*), and "drive it before them like an evil guest;" some

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throw it on the members which are lower in the scale of strength than themselves; and some discharge it on the skin. See Dialogue I.

STANZA XXXIV.—When it is expelled from the veins it becomes a mere question of comparative strength among the members who among them will succumb to it; if the skin is powerful enough to resist it, or if the members or organs that have it are too weak to drive it to the surface, it is sent to some part less noble than the skin. In the physiology of these early days the hierarchy of the members was as nicely graduated as the several ranks and degrees in an archbishop's court. The skin is an important organ, yet not so strong as some that are principal, nor so weak as some others that are of lowest rank; thus it happens to the excoriative matter that it is driven from post to post (*de lance en lance*), from station to station: at every fresh conquest that it makes it is forced to halt and breathe awhile, and gather up its strength. If not by any means strong enough to resist the organ succumbs and is consentient to it—"the villainy remains," *queda enel la manzilla*; the part is then permanently infect, *hærit lateri lethalis arundo*. From thence the matter emigrates to new soil or regions; with a certain humidity which tempers its dryness, it reaches outlying or foreign parts, *partes agenas* (see Stanza XXXI), and when there is much motion in a part it is rather drawn thither, especially if of low organisation; the joint is weak, unresisting, cold, hollow, and both calculated to seize and accumulate the stuff and to retain it. The joints, therefore, become the preferential seat of the

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morbid material or *daño*, which is nearly always to be found there producing the aches.

In what has preceded the reader cannot fail to perceive a marked resemblance to the pathological views of the celebrated Virchow. That there is any identity of description, or that the Berlin professor is indebted to this source for his conceptions, we are far from maintaining; but the likeness is altogether too remarkable not to afford fair subject of comment.

STANZA XXXV.—In this stanza the same idea is elaborated. The joints are mere drudges, they lay wide of the nobler organs, they are fed of the refuse; then we get a glimpse of the old Greek doctrine of pores. Since the pores are shut, the matter cannot well escape by ventilation, the part being full of nerves and cords, the sense of *tactus*, which is the most important of all the senses, is "fortified," or aggravated, or exalted. Such is the rationale of the aches.

Villalobos here closes the subject of the pain in the joints; it is very singular (*muy singular*) to use his favorite expression. It may not be true, but the pathological fiction is truly charming; it has all the interest of a puzzle, and it is even surpassed in interest by what succeeds. We shall there see how he explains the fact of infection not being early betrayed by any external manifestation.

STANZA XXXVI.—Our author has employed three stanzas and a half on the aches. Now he explains why the genitals are first affected, or rather why they give the first hint or anticipation of the disease. Under the immediate preconception or idea that this complaint was an epidemy or pestilence, a

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prejudice from which emancipation was the more difficult from its being a yet recent complaint, and, indeed, its rapid subsidence was still the expectation of the hour (even in the present day we find men who tell us that it is dying out), it was only rational to believe that, as with other epidemics, the blood-forming organ became first affected; the first thing that happened was that the liver was upset, not all at once after exposure to contagion, but gradually getting worse and worse. This faulty etiology arose from a misapprehension of the causes of the disease, which they believed to be "equivocal," and we, those among us at least who are well informed, know to be univocal. The liver throws the morbid matter on both groins, and glandular infarctions (*encordios*) become prominent on *both* sides. The word encordios or incordios is even now, among the Spanish people, the preferential name for such glandular swellings. The plural number is employed, expressing with precision what M. Ricord has termed *the glandular pleiad.* From these foci the excoriative material is ejected or spit, by the agency of the expulsive potentia, on to the genitals, which forthwith ulcerate by a process of corrosion; or they imposthumate, that is, a swelling or infiltration occurs, the epidermis becomes detached, and so you have a buba. There is yet another way in which the genitals may become infected. According to the faulty anatomical ideas of those days, the passage of the urine is directly from the liver, and this secretion serves as vehicle for the matter. The genitals are subject to the law which makes heat and humidity conjoint causes of corrup-

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tion, but, very fortunately, the matter thrown upon them is not ambulative.

Do not interpret it too grossly when we say the urine comes from the liver. The explanation of it, which we draw from Ambrose Paré, is in this wise. After enumerating the humours, he says:—"There is yet another serous or wheyish humour, not fit to nourish, but profitable for many things, which is not an excrement of the second, but of the first concoction; therefore nature would that being mixed with the chylus it should come to the liver, and not be voided with the excrements, whereby it might allay the grossness of the blood, and serve it for a vehicle, for otherwise the blood could scarcely pass through the capillary veins of the liver, and passing through the sinuous and gibbous parts, there come to the hollow vein. Part of this serous humour is separated, together with the blood, which serves for nourishment of the veins, and straight carried into the bladder *is turned into that urine we daily make*," etc., etc.

STANZA XXXVII.—An interval will then elapse between the time of exposure to infection, and the outward manifestation on the genitals. The growth or perversion of the humours in the liver is not the work of a day. "At first," he says, "it is not so complete." When, however, they have accumulated considerably, the liver, with the huge strength it has when the expulsive power is in operation, drives the humour along its conduits or issues, and so the genitals become affected. Note, this completes a stage which some have described as the first incubation or incubation of the primaries. All

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this happens before the matter is diffused in the veins; the appearance on the genitals precedes in order all perception of it on other parts by an interval, which he characterises as "many days;" this second period or interval intervening between the primaries and secondaries (using the modern phrase) constitutes another or second incubation, which is duly estimated by this writer. There will be much gamesome humour over this excoriative matter of Villalobos among superficial critics; they will say it is undemonstrable, yes, just as general infection which accompanies constitutional syphilis is undemonstrable, just as a virus is undemonstrable; a rational *ens* if you like, but of great assistance in lending plasticity to facts which would otherwise hold together by no thread or common tie. The mania for disbelieving everything that cannot be mathematically or materially demonstrated was ever a maleficent and death-generating agent in all intellectual operations. The indulgence we beg for Villalobos we may very soon need for ourselves. Ideas change, and in the main they advance. Half a century will suffice to make us the laughing-stock of another generation of doctors.

STANZA XXXVIII.—This is one of the most important stanzas in the poem. It gives an account or scheme of the *prodromata*. The sarna of Egypt is not come as yet. What are the symptoms which lead us to expect it? The first of these, and the most unmistakeable, is a buba or small sore on the genitals. Remark it is a single spot, lump, or sore, not multiple. In calling the more or less infiltrated spot or excoriation by the name of buba, Villalobos, in full agreement with the most advanced opinion of our day, which re-

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gards the thickening found in the secondary eruption, flat raised tubercles, for example, as of the same nature and as a sequence of the same pathological process with that we find in the hard chancre, the result of adhesive inflammation, according to the language of Henry Lee. The sore or lesion is a small one, "*llaguita*;" in the words of Ricord, "it is usually rather small."

Line 2. "Especially (*mayormente*) if without pain and hard." Then follow the other symptoms, pain in the head, blackish complexion, shoulders weighed down, sleep gone, or what there is of it mad, but not long. According to Cicero, we are all mad when we dream. Villalobos means to say that the sleep is broken by bad dreams, but this condition of madness during sleep does not last (*no tura*). It is a fine point of observation which I have not verified in my patients with the bubas, though in a bilious condition I have felt the same.

Line 8. The sight is disordered. Since the introduction of the ophthalmoscope we are more alive to this symptom, for during the stage of the primaries masses of lymph will be seen in the fundus of the eye. With such an assemblage of symptoms, ir you are an expert or sharp fellow, *si tienes cordura*, you'll know what is coming. Let the reader study this stanza well. Is not this to observe like Hippocrates and to paint like Leonardo and Albert Durer? or rather shall we not say, in the words of Dr. Montejo, he describes as a mathematician, and all the while with the rich, strong, and fertile pen of Aretæus?

STANZA XXXIX.—Now the complaint is come. It

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is no faint picture that we have of it. This stanza, like the 28th, only describes what is typical. The eruption in this case is black. Beginning in the shoulders the pain next attacks the knees, and "descends" to the shins; in their web or periosteum it is truly intolerable. The humour comes "trampling" into the tissue, breaking down, and routing all before it like a troop of soldiers. With its heat, which is *far more* subtle than the web which it devours, there is made a firm swelling, soft node we call it (*unos durujones*); the head and forehead, as well as the inferior parts, suffer from nodes or knots and glandular infarctions. It is only quite recently that attention has been drawn to glandular swellings about the back of the neck and head; they are mentioned by no other early author as a symption of this disease, but only by Villalobos in the terms just laid down. The word "*secas*" is unmistakeable; it can have no other signification than that of swelled or hardened gland.

STANZA XL.—We now come to consider the disease more in detail; its signs, *señales*, in other words its symptoms. This term is now for the first time used; before this we have read of accidents and properties, &c. Symptom is more reserved and special; it follows the disease as the shadow follows the body. He submits the fruit of his observation to the principles of the *quaternion;* but the symptoms are not therewith so much disguised but that we may discern all such varieties of the disease as are met with in the present day; we see with the eyes of our understanding the types which he has cast for our instruction. The bubas sometimes have a rose or red

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colour from the faintest erythema to the strong red stain on the forehead (*bermejor*, *bermejura*); or, again, we have the papula (*botor*), vesicular forms (*vegiguitas*), tubercles (*bubones*), ecthymatous pustules (*pustulas*), lichen and psoriasis (*postilias*), rupia seen in flaky crusts and scabs that are thick and bulky,—with other tertiary forms which are so much a cause of grief and weariness, though the infirmity was comparatively new. In exact proportion to his acquaintance with the disease the reader is struck with the fidelity of the description.

The first group of symptoms is the more worthy of note, because with them you should bleed and not with the others, though more irritating by far. In medicine of that epoch blood is described to be among humours the mildest. The sanguine in complexion are disposed to skin complaints, to hæmorrhages and menstrual fluxes; wherefore they endure bloodletting. Such a one has a strong inward heat, with a good rosy colour and good appetite for food. Accordingly we find, in Stanza XL, that of heat and irritation there is less described than in the stanza following; but still "they create within a hot material," with red stains on the forehead there is much heat in that part.

STANZA XLI.—A frightful picture, as one might expect where choler is concerned. Choler goes partly to the intestines, partly to the gall-bladder, part is consumed by transpiration and sweat. Paré says that it is somewhat probable that arterial blood is made more quick, thin, and pallid, than the blood of the veins, by admixture with choler. In the seventh line is a curious observation, namely, that the limb where

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this psoriasis comes is wasted by its presence. He says the bubas are small, very many, and they go on eating, *pequeños y muchos y comen despues*. They exist at the expense of the part on which they are situated; the flesh is worn away by their presence. I believe this observation to be correct, and I have not seen it mentioned in any other writer.

STANZA XLII.—In this cold and chronic form there is humidity, and since phlegm is at the root of it there should be itching; as Villalobos says, reflection (*el senso*) would tell us that it should be so; the chest, too, is apt to suffer. This form is ataxic, such as one might find in phthisical constitutions.

Line 6. "When the phlegm is white." This is one of the six varieties of non-natural phlegm; the glassy or albuminous (*albuminea*) resembling molten glass or white of egg; it is exceeding cold.

STANZA XLIII.—The last were moist; these are dry, except towards nightfall. Melancholy humour being the grosser portion of the blood, partly is conveyed to the spleen for its nourishment, partly carried by the vessels to the rest of the body, and spent in the nourishment of members endued with an earthy dryness, which spleen and osseous structures suffer much from the bubas. By the perturbations of the mind this humour turns to fear and sadness (see line 9). Some of these cases display a tertiary character.

STANZA XLIV.—More about the humours. In the preceding stanzas one cannot help observing the extreme precision with which he assigns to the aches a distinct hour or period of exacerbation. Was he or was he not under the dominion of theory in doing this? In treating of the humours, Ambrose Paré

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says, "All men ought to think that such humours move at set hours of the day, as by a certain peculiar motion or tide; therefore the blood flows from the ninth hour to the third hour of the day, then choler to the ninth of the day, then melancholy to the third of the night; the rest of the night remains under the dominion of Phlegm, manifest examples of which appear in the French pox."—Dr. Johnson's translation, page 10; London, 1649. These osteocopic pains are much under the dominion of artificial and solar heat. Beyond stating the fact that they are liable to variation in the hour of their incidence, and that this falls generally in the night season, I will not venture to refine on the common experience concerning them further than by referring to the experience of the French students quoted in modern works on the subject. When they went in the country during the summer heats, the pains were found to recur at midday instead of the hours of night.

Line 6. *Las mas segadas*, most of these crops. We have already said that in exact proportion to his acquaintance with the disease the reader will be struck with the fidelity of the description. This, at least, will hold good of the Spanish original. But, after all, the well-informed physician will miss somewhat in this description of Villalobos. Where, it will be asked, are the affections of the throat? It might be answered that our author included them in those "other places" that are affected "many days" after the primaries have appeared; but besides this he will miss all mention of very slightest and most fugacious forms, of the equivocal, of those which one must admit as more rare and ex-

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ceptional in the malady, of those that only appear after the complaint has existed for some years, the hereditary forms, the masked and the visceral on a larger scale than here described. These have constituted quite a chosen field of study with modern specialists, but would scarcely be expected in this early exposition. We must recollect the short space of time that had elapsed since the general propagation of the disease. Though not the first Spaniard who had written on the bubas, there is reason to believe he was the first to write on it within the borders of the peninsula. If Hidalgo has hit off some strong points which in our author we miss, this will be accounted for by his writing at a later period. Thus, Hidalgo profited by our author's writing, much as Rabelais, who was born just ten years subsequent to Villalobos, may be said to have borrowed from Hidalgo, as appears in that passage of his fifth book where he writes of men's bodies being made anew and regenerate. He says, "One way is by cohabitation with a woman who is new-cast (*refondue*), for so may you take that sharp species of pox called *la pellade*, in Greek *ophiasis*, whereby you change hair and skin year by year as serpents do, and so in them doth youth return as in the phenix of Arabia. 'Tis the true fountain of youth," etc. It is thus experience accumulates from age to age.

STANZA XLV.—Another natural division of his subject, wherein he gives an account of what has been done for relief of this disorder, and discusses the propriety of such treatment. Six stanzas are allotted to it, which are not the least interesting in the poem.

Line 1. When it was discovered that this pesti-

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lence did not pass away after the usual habit of epidemics, and that nothing turned it, for "neither good nor bad" changed its character, the people of that day "went astonished," *andava attonita*, and even the literate, that is to say the faculty, "stood dubious," *estava dudosa*.

STANZA XLVI.—The wine jug (*el jarro*), vessel of clay or metal, from which wine is drank; it has one handle and a narrow neck. "Tincture," in the original *Xarope*. *Coca* and *Arenas*, wine marts more than once referred to by our author (see Ford's 'Handbook of Spain'). *Rueda*, chief town of *Medina del Campo*, is a great mart of sherries. Lots of medicine, *xaropes continos*; the withholding food, the starvation plan, *el poco comer*. It is singular that this plan, too, should have been tried in those early days. It was affirmed that all these were "divine remedies, *i. e.* severally so.

STANZA XLVII.—With a materia "so indisposed" to come away, how can you expect to wrench it out with purges? Let us see now the course it would have to follow before it could be voided by the bowels. First, from out of the part where it is firmly implanted it must be made to enter the venous radicles or capillaries, from their minuteness little adapted to embrace and convey this gross matter when nothing has been done to thin it. From these venous radicles, *venas chicas*, it has to be carried to veins of larger size, increasing in calibre till you arrive at the *Vena cava inferior*; this large vein will have to impel or drive the stuff on the liver by virtue of the expulsive power, that is, if it is strong enough (*aviendo vigor*)—stronger, that is, than the liver, a

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thing that is very questionable, and then the liver would have to throw it on the stomach and bowels, thence to be purged. This is the only *rationale* which, according to him, is admissible for purging.

STANZA XLVIII.—"Now," he says, "let us look to the probability of this succeeding;" and the reader's best attention is especially requested to this stanza, because it gives a sufficient answer to those, who think all the conclusions of the earlier physicians are vitiated by the circumstance that they were not acquainted with the circulation of the blood. We pretend and maintain that here, quite anon and without any deviation from a customary and received line of argument, Villalobos shows a sufficient acquaintance with the systemic circulation more than a century before Harvey drew together all the threads that connected this important subject. "Tell us," says Villalobos, "how is it possible that this humour, being so firmly stuck (*inviscado*) in the part, and itself being so viscid and clogged, could ever be uprooted and thrown along these narrow conduits or passages of the hepatic veins. The word *horadado,* in all strictness, means borings, piercings, burrowings, much the same as *agujerado;* nevertheless usage, which is supreme in matters of language, sanctions the use of the word in the sense of conduits or passages. He affirms, then, that it is quite unlikely that the *Vena cava inferior*, however helped by the expulsive *potentia*, could succeed in throwing such matter through these narrow passages. With regard to the clots or coagula, which are familiar enough to every tyro in anatomy, it is not irrelevant to mention that in these veins of

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the liver, hepatic or supra-hepatic veins, there was first made the discovery of valves, whose existence in the venous tract had not been previously opined or substantiated. They are not, indeed, very distinct, but they were early noticed by *Etienne* or *Carolus Stephanus*, a celebrated Parisian teacher, *quasi apophyses membrarum in corde valvula*, nearly forty years previously to any notice of the valves in the venous system by *Fabricius de Acquapendente*, to whom our Harvey attributes the merit of a discovery, which may be generally considered a central fact as regards the larger discovery of the circulation. See Dr. Meryon's 'Hist. of Medicine,' vol. i, p. 287.

STANZA XLIX.—We must know and take account that of all trades practised in Spain that of saddlery is held most cheap by the multitude. These men of leather are in the lowest estimation, they rank with cobblers in England, and below the *épicier* in France. This makes Villalobos say (page 68) that he has not spent his time cutting up *çapatos de viejo*. When, therefore, Villalobos wishes thoroughly to depreciate those of his faculty, or of the sister art of surgery, or interlopers or pretenders, who used this mercurial salve, he says with sarcasm they are master-hands, clever fellows—yes! in harness work, which is as much as to say they are bunglers and cheap Jacks. Literally, *de albardas maestros* should signify makers or vendors of pack-saddles; the word *maestro* or magister, being an honorable one, and much sought for in the schools at that period, serves to make the irony more stinging. He lifts them up a bit and gives them a tremendous fling by comparing them with these low grooms. Villalobos does not

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deny that the ointment is efficacious in relieving the osteocopic pains; but, he says, their use of it is unwarrantable, they deal not openly and sincerely. Their language is not straightforward, their intention is not good; he calls it sinister, deceit lies at the bottom of the practice. We will let go by the question who first used mercury in *sarna;* it is sufficient that at the time our author wrote an opinion prevailed among doctors that the metal mercury, *argentum vivum*, or quicksilver, was not only gifted with poisonous qualities in a minor degree, but was veneficial, mortificative, capable of putting an end to human existence. Such a prejudice had probably been derived from cases of idiosyncrasy or a large abuse of the remedy in the hands of the vulgar. This opinion or prejudice was derived from the Arabs, and Villalobos, committed as he was to the canon of Avicenna, could not but partake of it. Avicenna, however, was aware that the pure metal, taken internally, was innocuous. By mixing mercury with lard, says Villalobos, "they make it enter the body more easily," where it exercises its "mortificative" qualities, destroying the animal spirit, and so stupefying or benumbing the part. Two points here merit our attention: first, that the use of mercury in the form of ointment for the cure of syphilis must have been consentaneous, so to speak, with the fact of its outbreak. Discouraged by the faculty, largely employed by the populace, the use of ointments composed of mercury and sulphur, intended for the cure of sarna, were sold in the streets of European cities, notoriously so in Italy. When, therefore, we come upon the inquiry, "Who first

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fluxed for the French disease?" we may boldly answer it was not *Berenger de Carpi* or *Vigo*, but that in the very beginning this complaint was treated as sarna, from the similarity that appeared or was imagined between the two affections. Writing in the year 1498, Francisco Lopez gives an account of the treatment that was adventured on at its very first appearance; and "some," he says, making use of the past tense, "*treated* this disease with mercurial ointment." The second point we shall notice is the return of the aches after the relief afforded by an insufficient mercurial treatment, which is explained by some from its using up or neutralising the superfluity or product of the *materies morbi*, and from its inability to touch and destroy the virulent principle or disposition which lies at the root of the malady. This view, maintained equally by Hunter and Virchow, accords with what is here described by Villalobos. It will be seen as we proceed that our author uses mercury as an ingredient in his ointments, both "killed mercury" and quicksilver, which is submitted, in the course of its preparation, to the reaction of other ingredients; sometimes he uses an inunction on the bubas, sometimes he simply lays it on the parts affected. It would appear, then, that it was rather this particular form of *argentum vivum* which was made so penetrative, and the bold and indiscriminate use of it in unauthorised hands, that he protested against. However that may be, syphilis soon brought back to mercury the reputation it had lost as a sufficiently safe remedy, and an extensive application of it redeemed the discredit into which it had previously fallen. Discretion may have been

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wanting in a hundred instances, but on the whole we must regard the use of mercury for syphilis on its first appearance to have been, in the hands of the faculty, rather timorous and inadequate. A proof that the Arabs recovered from their prejudice is found in the Barbarossa pills, sent by the famous admiral or sea pirate of that name to Francis I, King of France, for cure of his disease, the first instance, as some say, of its being used internally among Christians. But it must have taken some years of trial to establish the reputation of this formula in the Mohammedan world.

STANZA L.—The "animal spirit" is here the analogue of the nervous force or endowment. It is developed or elaborated in the windings and foldings of the veins and arteries of the brain, the *confluents anfractueux*, from out of a subtle exquisite portion of the vital spirit, brought from the heart by the carotids or sleepy arteries, and formed from out of the material of the air by the process of respiration. This vital spirit, then, serves as material for the animal spirit, which as it is formed is "purveyed" from the brain to the nerves, and imparts to the members both sense and motion. In palsies and apoplexies a humour or some poisonous agency has obstructed and barred its passage. The inference drawn is, that mercury acts by local destruction of the animal spirit. It is highly probable that cases of apoplexy or paralysis resulting from the morbid influences of the bubas were laid to the door of the remedy at this period of observation.

In the second half of the stanza some may fancy that the sweating treatment described was in use for

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primaries. I hardly think so, for before the stuff had issued from the veins there would be no such dried-up floor or receptacle (*terron desecado*) in the organs; such was only possible in the liver.

STANZA LI.—We now enter on a new division, in which he gives us his notions of what the treatment should be; and this he derives from "our authors," an expression used by him more than once; see their names in the ninth stanza of the *Sumario*. How is he to find the indications? We may learn this from Ambrose Paré, who to the ordinary sources of indication adds two for new diseases, viz. similitude and craft, or, as he calls it, crafty desire; "for new diseases, so long as their essence is secret or hid, cannot be cured by indications drawn from contraries, therefore they are to be treated with a way and art like those diseases to which they have an agreement of symptoms and accidents;" "and this," he says, "is what our ancestors did in dealing with the French pockes at the first beginning, so long as they assimilated the cure to that of leprosy, by reason of that affinity which both diseases have."

It is in this manner that we must interpret Villalobos when he says the treatment is drawn from "our authors." He means that his method is in accordance with their general views of treatment. The idea of thinning the humours is in perfect consonance with the theories of the epoch. We meet with the same advice in the poem of Fracastor.

STANZA LII.—Both of these syrups are compound, containing from a dozen or so of ingredients; both of them were much in use for cure of leprosy. Of fumaria or fumisterræ, it is said in the book of Sala-

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dinus, a great authority of that age, *inter omnia simplicia mundi non reperitur ei par in purificando sanguinem.* At a later period Cullen has praised it highly for the cure of lepra. It was good, in fact, for all skin diseases. The syrup of fumisterræ contained absinthium, cuscuta, myrobalans, etc. That of epithymum, the myrobalans, cascuta, fumaria, etc. I am so fortunate as to possess a copy of the work of Leonard Fuchs, the friend of Luther, a most learned physician and botanist, which enables me to give the temperament of these plants, with which their rationale is inseparably connected. Not yet wholly refined from European medicine are these questions of temperament, and from Indian medicine they are inseparable, forming still, in this our day, the basis of classification. The *Liber Messue cum additionibus* is also a great resource in questions of this kind, though many of the explanations required lie over a wider surface. Fumitory, then, according to Galen, is hot, with some frigidity, and dry in the second degree; it cleanses and fortifies; it purges choler by the urine, cures obstructions and debility of the liver, comforts the stomach, and has no manifest quality of heat; it is bitter to the taste, pungent to the eyes, aperient, antiscorbutic, and laxative. Being commended in scorbutic and acrimonious conditions of the fluids, it had once attained to considerable reputation in the cure of skin diseases—scabies, impetigo, pruritus, serpigo—and in expelling yellow adust bile.

Epithymum; cassutha or *cascuta; podagra lini:* parasitic plant, commonly called dodders of thyme, though found on other plants. According to the Arabs, it partakes of the nature of the plant on which

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it is found. I find it much used in 'Turner on the Skin,' London, 1730. It is scarce mentioned by the classic authors; tradition attributes its introduction to the Carthaginians. This also was much employed for leprosy, scabies, saphati, etc. Hot in the first degree, dry in the second, for it has some bitterness. Abstersive, loosens obstructions and oppilations of the liver, discharges gross humours and all that are adust, choleric, or phlegmatic, as well as black bile. As a solvent it is powerful. The explanation of the caution given I take to be this: the liver is a principal part, and the principality of a part, as Ambrose Paré teaches us, always indicates the use of astringent things; in the present instance solvents are desirable for the obstruction of the liver, but unless you mix astringent medicines with loosening you will so dissolve away the strength of the part that it can no longer serve for sanguification. *Epithymum* is also diuretic. The whey is not only edulcorative, but a chosen vehicle for diuretics.

Bugloss, *buglossum magnum*, Ox-tongue: purges choler and phlegm, is tonic to the heart.

Palomine, *palomina* in Spanish, is nought else than *fumaria*.

STANZA LIII. — *Cartamo* or *alazor*. *Carthamus cæruleus*, *Cnicus* of the Greeks, or *crocus hortensis*, wild saffron; its flowers like true saffron; it is also like the thistle, but its seed has no down. Annual, native of Egypt and warm countries; well known in Spain. It stands two feet high, its sprouts and branches have a blue cast, leaves partite. The plant arrives at no perfection in England. The flowers are used in dyeing. The seeds are white, acrid, as may be known in

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applying them to the skin. They are hot in the third degree. Their juice curdles milk and makes of it a good purgative. They make up into purgative biscuits and cakes, but unless nicely prepared as a purgative they offend the stomach. They are also diuretic and expectorant.

Line 7. The gera of the text is *hiera picra*, in some works called Giropliega.

Benedicta consists of purgatives, rhubarb, senna, *agaricus*; sometimes hermodactyles or *diagrydium* (scammony), with various warm aromatics.

The composition of *benedicta* varied somewhat. All comforting purgative medicines belonged to a class called *benedicta*.

Avicenna is very strong in his injunctions concerning *enemata*, that they be not too searching and acrid (see *Lib.* 1, *Fen.* iii, cap. xii, *Lib. Canonis*), for they may induce fever by their heat and weaken the liver, interference with whose blood-forming functions we have already said should be studiously avoided, as Galen is careful to warn us, vii, *Method. medendi*. According to Avicenna, enemata often get rid of matter causing pain; they draw or attract the humours, and also air, from the principal and superior members, after the manner of purgative medicines. Agreeably to the doctrine of the Arabs, especially Messue, this attraction results from a certain identity between the humour and purgative, like being drawn to like; whereas, the Greeks supposed not so much identity as similarity of nature and character. So the magnet draws iron with a certain resemblance that it has to iron, and it is stronger; but iron draws not iron. So *Carthamus*

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would draw or attract the phlegm, and in virtue of its heat would have power over it, being stronger. Messue objected that with things having mere resemblance the attraction would be necessarily reciprocal; but, according to the words of Galen, it seems not so. To sift the matter, consult Galen, Lib. II, *de elementis; de atra bile*, cap. vi, Lib. I; *de potentiis naturalibus*, cap. xiii and xiv, Lib. *de virt. med. purg.* It is really a very pretty question.

STANZA LIV.—The minorative or gentle purge, what we now call an aperient, a term which, however it may have extinguished the other, is very apt to remind you of Rabelais and his decoction of keys. The minorative of the Arabs was an immense improvement on the drastics of Greek medicine; but, alas! what has become of the apothecary's art? Where now are the myrobalans? Not only were they famous laxatives, but counted most excellent for admixture with other purgative drugs. Little known by the Greeks, highly valued by the Arabs, the reputation of the mirobalans among the natives of Hindostan stands at the present day as high as ever. How is it that, with an increased facility of supply, their reputation in Europe is departed? This seems, indeed, to have been less through their fault than their misfortune, through our neglect and fashion's caprice. In the 'Pharmacopœia of India,' A.D. 1868, they are mentioned with respect, but the account we get of them is rather barren. Content to do as they have been lessoned, the English have thought too little of these native remedies. They are purgative, carminative, and tonic, for our heroic race deemed, perhaps, not sufficiently powerful,

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The word mirobalan signifies *glans unguentarium*; in description they are likened to small plums and to olives, mostly with a kernel or stones, or to acorns. But there are five sorts, and each requires a particular description drawn from its size, shape, and other exterior characters. Their curative and physiological operation is also different. In European medicine, before the discovery of India, the mirobalans were classed together; it was not known whether they came of several trees or plants, or if one tree bore them, all sorts alike. According to the 'Pharmacopœia of India,' page 86, the Belleric and Chebulic grow on two several species of *Terminalia*, which are common forest trees, and the black (otherwise the Indian mirobalans) are the unripe fruit of these. The Emblic are borne by the *Phyllanthus emblica* (see page 205, P. Ind.). Laguna, already mentioned as rival to Villalobos, and physician to Charles-Quint, has given a good description of these drugs in his famous 'Commentary on Dioscorides,' which is transferred in part to the 'Dictionary of the Academy,' A.D. 1726. See also *de Orta*, *Acosta*, and *Bontius*. Their curious names, says Laguna, are obtained from the Arab term for the trees they grow upon. Thus, the Chebulic, which is plentiful in the Deccan, are of a tree called *Quebuli*, so the emblic from one called *embelli*, the belleric from a tree called *belleregi*, with leaves like a laurel. They were sent to Europe moist, preserved in sugar, or dry. The dry were reducible to powder. The yellow kept two years, the black six years, the emblic and belleric eight years. As a purgative, they were used in decoction or infusion, also mixed with other purgatives

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in pills, *Pil. de v gener. mirobalanorum.* They were always of the class called *benedicta.* When fresh they are acidulous in character, they possess a good deal of astringent material, and are serviceable in the arts. Bontius, of Java, praised the emblic mirobalans as very good in dysentery; these are indeed the most astringent, they are used for ink and to stain the eyelids. In medicine the yellow were most in use, and they should have a pleasant flavour. On the first discovery of India, this sort was found abundant in the neighbourhood of Goa. They are like an olive, with some external unevenness; the Arabs call them *azafar.* The black or Indian had some reputation for cure of lepra. These dark mirobalans are rather long, and like acorns, and have no kernel. Rhazes had a strong prejudice in favour of this black or Indian sort; he even believed they conduced to length of days. The qualities of mirobalans are summed up in four lines by John Platæarius (*lib. de simpl. med.*, c. 78), an author of the days of Villalobos:

Mirobalanorum species sunt quinque bonorum,
Citrinus, Chebulus, Belliricus, Emblicus, Indus:
Primo trahit choleram citrinus, phlegma secundo
Chebulus, é contra Belliricus, Emblicus æque
Illud, et in nigram choleram niger imperat Indus.

Will the myrobalans ever be restored to favour in European medicine? We should say it is not at all unlikely that they will; the very little stability there is in the choice of purgatives makes it almost beyond a doubt that, sooner or later, such will be the case. Twining, *Dis. of Bengal*, vol. v, page 43, praises these fruits as purgatives, etc., and speaks of

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their benefit in a case of enlargement of the spleen; but our practitioners in India seem to have bestowed as yet but a minor degree of attention upon them.

Before continuing with our list of drugs, it will be well to remember what the ancients taught concerning insufficient purgation; when medicine did not overcome the quality of the evil humour, it became converted into that humour, and so it lowered the strength, and was further cause of depression. It was therefore necessary to have an exact proportion of ingredients. The plums had a certain medicinal character; they are generally classed "between cold and hot, moist in the second degree." The tamarinds are altogether Arabian; they prevent putrefaction and correct flatulence.

Cantueso is the common lavender of Spain, where it exists in vast quantities. It is the *Lavandula stychas*, the same we call French lavender, Stechas of the French. For medicinal virtues it was formerly more esteemed than at present: cordial, alexipharmic, etc.

STANZA LV.—Purge the humour, if it is disposed or sufficiently prepared to come away, *subtilizado*. He has said, Stanza XLVII, that it is naturally indisposed to this, being fast implanted or rooted in the seat of obstruction.

STANZA LVI.—A finely descriptive stanza.

STANZA LVII.—The Indian pill had this sort of composition—hiera simplex, stechas, epithymum, the mirobalans, black hellebore, white agaricus, colocynth, *azur*, etc. The pill of palomine or fumisterra consists of the mirobalans, yellow, chebulic, Indian, emblic, aloes, diagrydium, with the juice of fumaria. It appears to have been rather an expensive pill. The

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spica was probably the Indian or Syriac nard, a precious drug, stomachic and antispasmodic, not easily obtained, it resembled valerian; or possibly the *lavandula spica, pseudonardus*, is here designed, called spica in the shops, of which *Leonard Fuchs* says it cures hysteric pains and hardness of the spleen, and oppilations of the liver, and that complaint where the urine comes with difficulty and drop by drop; being also good for paralysis and such maladies. The bulb of the hermodactyle should be white and weigh lightly in the hand, to which recommendation it was generally added that it should be hard. *Fuchs* says "it would seem, then, that Serapion the Arabian has described, under the name of hermodactylus, the colchicum of Dioscorides." "Still I have some doubts whether his description does not apply to some other thing than our hermodactylus, which Aetius, Paulus Ægineta, lib. vii, and Actuarius, declare to be specially good and serviceable for *pains in the joints*. And Paulus has separate chapters for Colchicum, Ephemeron, and Hermodactylus."

STANZA LVIII. The dark ones, *los prietos*, known by that name in the shops, the Mirabolani nigri vel Indici already mentioned.

Line 6. The fern Polypody, esteemed in ancient medicine; according to Dioscorides, it purges phlegm and choler; it is desiccative without acrimony. It grows on the oak, and therefore is called *felix* by the Greeks. It is also found on stones; as gathered from the oak it is preferred, about the size of the little finger, and yellow. Its flavour goes not amiss with that of fowl. *Jus galli veteris cum polipodio et anetho confert colicæ valde. jus prædictum cum polipodio solvit*

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melancholiam et cum carthamo solvit phlegma. See Avicenna. He insists that it purges melancholy from heart and brain and all the body. Paulus and Pliny exalt it as purgative. Polipody is now only used for catarrhs in old people; *Diembroeck* by a pretty conceit has likened the human hair to it.

Line 8. Eupatorium or Hepatorium of the Greeks. More than one kind. The first is Agremony; this is the true Eupatorium. It is searching and cleansing without heat; according to Galen, it relieves oppilations and obstructions in the liver at the same time that it strengthens the organ. The Eupatorium Arabum or Bidens is botanically different; sometimes it is called the bastard Eupatory. This too is exceedingly bitter. Eupatory, according to Dioscorides, has the property of cleansing, purging, searching, and modifying and subtilising the grossness and thickness of the humours contained in the veins. It is diuretic, expectorant, and emmenagogue, and it has other qualities allied to its bitter taste, which Galen tells us of in his seventh on the faculties of simple medicines. It resolves and breaks down obstructions of the liver, spleen, and other organs. It dries wounds and is highly alexipharmic.

Leonicenus, whose treatise on syphilis, A.D. 1497, is one of the earliest known to us, was a man of vast learning and experience in physic; most highly honoured in his day for corrections he had effected in errors and discrepancies into which ancient authors had fallen. Pliny more than the rest. The treatise on syphilis was written by Leonicenus when he was well stricken in years; it shows a weak apprehension of the subject; and but a slight acquaintance with it;

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but the work, though intricate and obscure, is full of interest in secondary points, especially as to skin disease.

In unmasking sources of error which beset the scholarly physician, this author instances Eupatory. "Dioscorides," he says, "informs us that many in his day fancied *Argemonium* to be the Eupatorium. This source of fallacy has so worked on us that the true Eupatory is now known by the corrupted word Agrimony. It is our Agrimony or *lappula* that answers to the botanical description of Dioscorides: the other, which the people call Eupatory, is a common plant that grows wild in the ditches, yet it finds its way too often into the apothecaries' shops." Here, then, is the reason why the poet warns us that the Eupatory should be choice, or selected with care, *Eupatorio escogido.* "If there is anything in the world," says Leonicenus, "that merits the name of *hepaticum*, it is truly this Eupatory, so named by the Greeks, though Pliny somehow has the name of having introduced it . . . Once again, Galen says, "Eupatory is excellent for the liver, just as the mirobalans for the spleen; saxifrage and *betonica* for the kidneys."

In the Mauritius Eupatory is now in daily request. It was recently much relied on to restore the circulation in their cholera epidemics. Indian practitioners have praised it as a warm bitter tonic, and also for fomentations, to dress sores, etc. It seems to have a superior claim on our attention. See Pharm. Ind., p. 127.

Line 5. Black hellebore milder than the white. "The black," says Serapion, "purges melancholy humour by stool, the white by vomit." "The

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white hellebore of our day," says Messué, "is nothing short of poison, but the black may be borne." Haly Abbas, as the same author informs us, had some pills of black hellebore, *quarum juvamentum est ultimum ad egritudines melancholicas et cancrum et lepram et morpheam albam et nigram, etc.* He dissuades from the powder. Others, however, recommend it in scruple doses, with pepper and various carminatives.

Line 7. We find Agaricus classed with rhubarb and other purgatives of undoubted efficacy; we cannot doubt, then, that it was really efficacious. It is said, by its admirers, to purge without pain or vomiting, being even cordial to the stomach, but it was mostly accompanied by carminatives. It is called solutive and incisive, removing gross matters, phlegm, and choler, especially melancholy humour; it is also called. sudorific. According to an old authority, Democritus, quoted by Messué, Agaricus is good for internal pains, *valet ad omnes intrinsecos dolores corporis.* Serapion says the same, and also that it cures sciatica, and all pains of the joints. It is said to remove oppilations, especially of the spleen and liver, and gets rid of jaundice. The dose is from one to two drachms of the powder. The taste is first sweet, then bitter and styptic. It is mostly found used in combination. In large part Agaricus seems to have been imported from the Bosphorus, much *prestige* attaching to all medicines that came from the East.

Line 10. *Lapis Armenicus*, by no means the Armenian bole. This has a blue colour. "Armenian stone," says Alexander, quoted by Messué, "has a special privilege of expelling black bile, far safer in

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its operation than *helleborus niger*, better far to use than lapis lazuli." Bart. Montagnana says it has a special property above all medicines in purging the melancholy humour (*De pond et dos. med.*). According to other authors it cleanses by purging and vomiting, it is good for splenic obstructions, lepra, morphea, etc. Why does Villalobos say "the Armenian stone as used by Eben Messué," "or according to Eben Messué"? The following is the reason. In his day it was confounded with lapis lazuli; by enemies of the Arabs and traducers of Arabian medicine a great cry was raised on that account against some of the most considerable of their drugs. Such were the *Confectio Alkermes*, the *pilula de hermodactylis*, the *pilulæ fœtidæ*. The *lapis lazuli* was declared to be a poison, not less so than *minium* and cinnabar. It was "made by Alchemy, and sold to the painters." Rondeletius says, *Ventrem supra modum dejicit et crustas excitat.* Nor have the ancients who knew this stone as *cyaneum* written of it as purging black bile, quite the contrary. Dioscorides says it is destructive and putrefactive. It would appear that both of these stones were well known to the Greeks, but Avicenna and Serapion have wholly confounded them.* This is not so much the case with Eben Messué, who gives you a short chapter or paragraph on the Armenian stone in the second section of his *Canones*, recommending it for purging choleric and melancholy humours that are adust; elsewhere he

* The Arabic vocabulary, notoriously copious, in all that concerns precious stones is amazingly poor. The Hebrew scarce less so. Holy Writ confounds *lapis lazuli* with the sapphire. See Job xxviii, 6. Pliny does the same.

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gives you a receipt for his *pil. de lapide armeno;* still one would desire on the part of this author more preciseness, especially as to the properties which distinguish them; for in his famous cordial, the Confectio Alkermes, he distinctly orders the *lapis lazuli*, and yet says of this preparation that it is good to purge black bile, a property certainly not attributable to that stone. In appearance the *lapis armenicus* seems to have been of a greenish blue tint, stained somewhat like the borax of commerce, showing green and black spots in fracture, coming to market in masses, not high priced. It is pulverizable and fairly soluble. Its action is said to be sufficiently bland, especially when washed; when not washed it was more harsh; of the former, two drachms might be given; of the latter, but one; some carminative or cordial should be taken after, as water of bugloss, which is tonic to the heart, and the same is even said of this stone.

Rondeletius (*de pond. med.*), writing soon after Villalobos, speaks of both the Armenian stone and *lapis lazuli* as efficacious, but acrid. He remarks that the *lapis lazuli* is employed by Messué in the preparations aforesaid, in far less than purgative doses after it has been burnt as *chalcitis*, and many times washed as *cadmia*. It is probable that after all they did not differ so much in their operation, nor even in the composition, being both of them, as one may conjecture, oxides of copper. They possibly acted as one of the ancients has described hellebore to behave, like a valiant captain heading his troops; for it is even so that sulphate of copper is found to be one of the safest of emetics. Campegius, in the middle of the sixteenth century, says that the

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Armenian stone was by that time in France scarce known to physicians; there was used as substitute for it a sandy stuff brought from Spain. Can our travellers learn anything about the Armenian stone? Is it still made use of in the East?

Messué was a Nestorian Christian, physician to Haroun al Raschid. We have in the library to the Medical and Chirurgical Society two copies of the Liber Messué. One of them, a large folio in Roman letter, very noble, bearing date so early as A.D. 1479, printed by *Franciscus de Sancto Petro*, the other, in Gothic letter, *cum additionibus*; it is in small folio, published at Venice by Paul de Valeschi, physician of Padua, A.D. 1491.

STANZA LX.—He has now set forth a good part of the treatment. The Arab medicine was empirical, based on common experience; the explanation was defective, the practice generally sound. The Arabs were more prompt in treatment than the Greeks; the latter waited for the humours to be concocted before they ventured to purge them, but they assisted or interfered not in this concoction or digestion, if so it may be called. This may be known from the oft quoted aphorism of Hippocrates, 9, lib. ii, *concocta debent medicari atque moveri, non cruda*, and other evidence that might be mentioned. Their's was the *médecine expectante*: they left much to nature, at least in the beginning of the complaint. On the contrary, the Arabs strove to thin and cut the humour artificially, and also to digest it, after which they purged, all which *secundum artem*. We have seen in the text that certain syrups were given, not simple syrups, but compound or magistral, Messué's syrup of

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fumiter and that of epithymum. The dose was two ounces, with three of certain waters. The syrup must be always one ounce and a half or two ounces, and the waters three ounces, according to the model of Galen, *primo reg. acut. comment.*, ever after adopted and not to be departed from in medicine. These syrups serve for several indications or sicknesses, as a grave writer says, *humores simul permixti non facile ab uno medicamento trahuntur*; each ingredient is determined or directed to some particular part or parts, and some medicines derive from one member, some from another, as should be in the treatment of disease that seizes on the whole frame or works in it. This even holds good of each drug. Elements alone are uniform. Medicines being of mixed constitution, their action is necessarily complex and co-operative or combined. All the humours are intended and cared for in this treatment: blood when corrupted is mostly turned to choler, or to malign, melancholy humour, far less easy to purge than choler; phlegm or pituita is not neglected; carthamus, polypodium, senna, agaric, turbith, anise, are eminently purgative of phlegm. Clysters are used from the commencement, containing simple laxatives, evacuants, as cassia fistula, plums, raisins, and stronger purgatives besides, as *hiera*, which is one degree less solutive than aloes, and *benedicta*, which contains turbith, whose sluggish action is corrected by the brisker hermodactyl and scammony, purgatives of the fourth degree of efficiency. Oil is used in these clysters, which would not be the case if excoriation or ulceration were dreamt of according to the precept of Galen. Thus he solicits by the bowels, by the mouth he gives solutives, mostly of

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the second grade, *solutiva debilia*, and stechas, which is especially good for cold matter in the head, a digestive aperient. When signs of digestion appear, it behoves him to purge the matter freely. Does he use rhubarb and scammony, which are principal in purging black bile? Nothing of the sort: the affair is not so simple; he uses searching medicines which have respect to distant parts rather than to parts that are proximate; they are mostly of a class that act by purging and vomiting; but less humour is evacuated by vomiting than purging, so that he must contrive to correct this defect by mastych and skill in combination. To draw the matter from distant parts requires a larger dose than a mere evacuant; the dose of hermodactyle will not then be trifling; this medicine is carried to the joints, and derives from them. Spica, too, is a strong medicine, powerful against oppilations, easily causing abortion, it derives from the head and other parts. The form of pill is best for strong purgatives; in this form the medicine is supposed to suffer some degree of fermentation, and so become milder and more mellowed in its action. In the liquid purge senna is used, and polypodium, and eupatorium, all somewhat bulky medicines; the epithymum is not to be subjected to strong heat, the stronger purges are given in moderate doses; such is the *lapis armenicus*, sometimes compared to veratrum; such also is the hellebore. Agaric draws phlegm from all parts of the body, but more than half a drachm might offend the stomach. There remains to be noticed the cassia fistula, a medicine introduced by the Arabs, comparatively expensive, no doubt, as well as the tamarinds in those days, and valued

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accordingly. Messué says its action is not perfect, but is better with whey, or corrected by water of mastych and spica. If this decoction proves too cloying, give epithymum dissolved in goats' whey to remove the dregs of the complaint. We are here surprised at the insufficiency of the direction for a thing which is to supplant all that has occupied him in the two preceding stanzas. Note, too, that in the directions for the purge he has left the quantity of the mirobalans, etc., to the judgment of the physician. Very many things, my reader, has Villalobos left to the quick apprehension of his contemporaries, that escape us altogether, of which the present bids fair to be an instance. All physicians in his day knew of the prescription of Galen for lepra: half an ounce of epithymum boiled in goats' whey. Galen *primo reg. acut. comment.*, 42, most of them used a larger quantity of the epithymum. Villalobos, as seen above, partook of the opinion of those who thought that epithymum would not bear the action of heat. He used the other method of letting the epithymum infuse all night in the whey to be drank in the morning. See *Petri Gorrei, formula remediorum*, Lyons, 1584. This is the place to remark that the Spaniard, according to Rondeletius, was somewhat harder to purge than the Frenchman.

Quid de theriacis. What shall we say of the *theriaca?* whether Andromachus or another invented it one might say, *il a fait des petits*, were they not such a huge monstrous brood. It is hard to say which is major, they look all so very big. The *theriacæ* differ in their indications somewhat, and somewhat in their composition, but all of them are

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cordial and alexipharmic. In the medical Literature of those times we are constantly bidden to have a care for the heart, for that member is prince and king; the bugloss and lavender are intended for this, and so now also the *theriaca*, and very comforting indeed must it have been for the poor ailing syphilitic; a grain of solid opium would have been better still, which is nature's own kind pharmacy. The aim at universality is ever high ambition, but one can hardly understand how these ancients, with the ideas they had as to the efficacy of place, could have gone so very wild on the subject of a universal medicine, for everything with them was strong when it preserved its natural place. Not to the Arabs, to the Roman world belongs this schwärmerei. It could only occur, one would think, under pressure of a great disease, such a one as, like Aaron's rod, would swallow up all the rest, *pestis nostra est omne malum ergo theriaca est omne bonum.* In our day the intention is more to search for the cause of the disease, and then to decide upon the remedy.

There is no venom so parlious in sharpnes
As whan it hath of treacle a likenes.

STANZA LXI. The less need be said about implication of the liver in the disease, as it is now under keen observation, and good books are written on the subject. What most we need to know of the anatomical conditions is the very earliest stage of change, of this what I have seen at the Pathological Society and elsewhere has been scanty as yet, and less informing than suggestive. Villalobos says this organ is the "corner stone" of the complaint, we say it

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is secondarily affected; he can explain the primary incubation, but we cannot pretend to do so. Remark here, that inunction is subjected to strict therapeutic rule. In order of application, the ointment, as milder, precedes the cerate, as the cerate precedes the plaster. Its drugs should be more highly pulverised. In order of potency the series is reversed. All the ingredients are selected to follow the common rule we have already laid down, that of looking to special parts or members, and deriving from the same. Of this the *sandaline* is an instance, which has potency on certain viscera in the head and chest, and on the liver, while it cures inflammation and bothor. Salve of ferment is attractive and abstersive.

STANZA LXII. "Take climia of silver, not of other metals." What is this climia? I read in Leonicenus of *tucia*, *climia*, and *chimolea*, in a passage where he would persuade us that saphati is moist tinea as well as the dry. In Bernard Gordon's 'Lily of Medicine' I read of *climia* of silver and also *climia* of gold. I read of them in other books, and also of red *climia*, and *climia omnium*, and *climia romana*; but when I look for an explanation in such dictionaries as we use, I find not the word at all. Some say, however, that it is the *cadmia*, such as is described by Dioscorides, and Galen too has written about it. It would appear then that the Arabs were not the first who made use of silver in medicine, unless cadmia was scoria of copper. Avicenna and Messué say that climia is spoil of metals, *fex æris*, *fex auri*, *fex argenti*. Avicenna comes nearer the mark when he says in the index near the end of his book that *climia alfada*, *id est*, *climia argentea*, *est fex argenti qui elevatur per*

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locum in quo funditur, for gold and silver when in fusion, cast no scum. *Climia* is the spoil of furnaces, but sometimes also it is a natural stone. No author that I know of tells much of it, Serapion excepted, whose relation is really entertaining, and yet it is not so long as to weary one; it is chiefly with climia of other metals, or of copper, that he is concerned. He speaks of a *climia* that is a stone, it is found in the bed of the rivers, especially in Cyprus, and he gathered one on the spot; he tells you the whole story amusingly. He speaks of the means by which he can distinguish a *climia* from any other stone, and there is many a one that is found in the mines will not bear the proof. Those of silver, he says, are chiefly found in mines where silver is procured. Galen, too, paid a visit to the island, and gathered stones from the water courses and hills, of which he made presents to his friends. These were excellent *cadmia*. "The character of every climia in medicine is styptic, it heals up sores, purges the sordes of putrid ulcers, removes, diminishes, and dries superfluous flesh, corrects all that is calculated to deceive and is unsound in them." So far Serapion. Of climia of metals, he says, "the best is *hancodi*, and then there is *zafari*, and another which the Greeks call *mantich*; and another white sort that is bad; and there is yet another species which comes of silver, and it is lighter, and whiter, and weaker than those which he has named;" all these he describes: "sometimes *marchesita* (*fex æris*) is dissolved in furnaces, and there is collected from them *climia*, and none of these he has mentioned are good for the eyes, except *hancodi* and *zafari*. The rest are suit-

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able for wounds and common uses in surgery." In the 'Liber Servitoris,' which is written by an Arab physician, and added to the book of Messué, there is, as well as in Serapion's work, a formula for burning in true Arabian fashion, and subliming, and killing, and selecting each one of these scoriæ, for so they are called, whether of gold, silver, or iron. In the formula for the silver climia the best of it was called *cabruties*, the worst products were only good for ointments; with all this, one arrives at the conclusion that *climia alfadi* or *alfaddi* is just a litharge of silver, a *galena*, or what a Spaniard would call one of the argentiferous alcohols; nor let our reader be surprised at the word, for, if we are permitted the digression, we may say that alcohol in Spanish means antimony; in Arabic *kuhlun* (see *Aldrete*, *Diccionario*), from the verb *kahala*, to blacken with antimony.* The Arabic word is borrowed from the Hebrew כחל, *kachala*, to paint with antimony. *Vide* Ezekiel xxiii. 40, כחלת עינין; in the Septuagint εστιβίζου τοὺς ὀφθαλμούς σου, "thou hast blackened thy eyes (with antimony)." The Latin also necessitates more words than one, *circumlinisti oculos tuos cum stibio*. In the Spanish language the word *alcoholarse* means to dress one's complexion and lids in adornment. Climastica, in the *quid pro quo*, or book of substitution, which is given in the book of Messué, is made interchangeable with *lithargyrum*, and this word is often used for climia of silver. These alcohols, climiæ or cadmiæ, minerals and

* So also the Arabic *kahhāl*, oculist. Parkhurst is inclined to derive our English words coal and colour from the same Hebrew root, *kachala*.

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mineral products, which were known and individually prized by the Arabs, and put to use in medicine, must have given them a great advantage over us of the present day, in treatment of diseases of the skin. We have scarce anything left to us but zinc and the calamine, often quite unfit, as found in the shops, to put on excoriated surfaces. Some years since, an oculist of world-wide fame highly praised to me a certain ointment made of *tuttia* and fresh butter. I know it now for Geoffroy's eye ointment, having met with it in the course of my reading. Though clean against Galen, who will allow no fat to be put to the eyes, I can have no doubt that the ointment was good, but how rich is Arabian medicine in all the applications to the eyes, especially with regard to these earths. Here is one which I borrow from Serapion: Take four drachms of gum; of opium, and of climia of all (the metals) each three drachms, pound well and mix. These, possibly, were insufflated or blown into the eye; sometimes it is climia of silver, sometimes it is climia of gold, that is used as desiccative for indolent non-inflammatory conditions in the eye and elsewhere; *tuttia* shares also in the nature of a *climia;* the true *tuttia* of Serapion, according to Laguna, is the *pompholix*, which was sovereign for the eyes; there was also the *Spodium*, composed of gold, silver, and lead, but that of Crete was mostly lead, and thought to be the best, as *tuttia* was mostly tin. These became supplanted by inferior sorts, the *climia* by *bothryites*, the *spodium* by ivory black. *Cadmia*, *spodium*, *pompholix*, and *scoria*, were all got from the furnaces. I can believe them to have had great efficacy. The

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climia seems to have had an ashy hue inclining to blue or black; it was inferior in shops to the *Pompholix*; and besides these there were the *Onycitis*, *Ostracitis*, *Calamitis*, and *Placitis* or *Placodes*, all of which came from the furnace, and were in some sort *Cadmias* or *climiæ*.

If we look into '*Kazimirsksky's* Dictionary' of the French and Arabic languages we shall find that the noun اقليميا Iklimia or Ik-limia has for its primary signification the smoke and scum that come off from gold and silver in fusion. It would appear that the word is derived from the three letter verb قلم kalama, to cut, signifying generally to divide.* Very possibly the origin of the word may not be Arab. It may be said that after all there is nothing here described as to the climia that does not correspond to the account which Pliny has already given us of the cadmia (see Pliny 34, 10—22). I assent to that in great degree; his account is truly most valuable and complete, though laconic, as is usual with him; especially is it true in what he says as to silver, *etiam in argenti fornacibus cadmiam fieri candidiorem et minus ponderosam sed nequaquam æreariæ comparandam.* But while praising preparations of copper, which were very much appreciated in medicine, in speaking of a veneficial agent, he says, "It is poisonous as the scum of silver." *Est enim potus lethalis sicuti spuma argenti.* Not only did the

* This further explains the meaning of the word alcohol, as technically employed by the chemist, viz., a very subtle powder or highly-refined liquid. Spirits of wine in Arabic is *arāk* (arrack).

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Arabs use this metal externally, but also internally. It will be found to enter into the celebrated composition, the *electuarium e gemmis* of Messué.

Line 2. This litharge is much as we use it. *Cerusa*, the white lead that is so readily dissolved in vinegar, *psimmythion*, *oximilium*, the *albayalde* of the Spaniards, called in Arabian works *bayad*, *alaunoc*, and other names it had, Serapion calls it *asfidegi*. In the '*Liber Servitoris*,' appended to the book of Messué, I read how ceruse is made in Spain, how burnt, and washed, and purified, see *Lib. Serv. Bulchasin Benaberazem translatus à Simone Januensi interprete Abraam Judæo tortuosiensi*. The formula of Villalobos is evidently modelled on one in Avicenna. R. *cerussæ*, *merdasengi (lithargyrum) ana* ʒ *vj*, *Scoriæ argenti (climiæ)*, *plumbi adusti ana* ʒ *iv*, *M. ft. unguentum.*

Calcanto. Copperas. *Couperose* of the French. *Zeg* or Aseg of Arabian medicine, زاج; *Zauj*. Avicenna says *alcalcantum* is *atramentum viride*. *Zeg est vitriolum et est atramentum.* It is elsewhere called *prasion viride* from *prason*, porrum. "The *atramenta*," says Avicenna, "are soluble substances which are united with others that are not susceptible of solution, which once may have been liquid, but now are hard and set. Of *atramenta* there is the white, the red, the yellow, and the green; among these he mentions none that are blue. Each colour denotes a species. All are soluble in water with heat, except the red, which is *alsurie*. The green (*alcalcantum*) is closer than the yellow (*alcolcotar*), especially outside; these two are more subtle or finer

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than the rest of them; all are good for moist scabies and saphati."

He says the green, which comes from Egypt, is stronger than the cabrusie, which we may remember was the choice of the *climia*, but in diseases of the eye cabrusie is more powerful, not burnt it is stronger, and burnt it is finer, and the white and the green are the finer, and colcothar more equal, and alsurie more gross; this last, too, comes from Egypt, and is insoluble in water. All of them are styptic, and more or less caustic, all of them are good in surgery, and used for moist scabies and saphati. Calcantum is 'especial for cold pains,' so far Avicenna. Green copperas was known in old medicine under various names: *calchantum*, and the *Soly*, and the *Misy*, which also came from Egypt. But we need some little caution in deciding that what we have here is an iron ore or sulphate of iron, as found in our English mines. Iron earth or ore is not often coloured green. It is not so much that Spanish dictionaries describe calcantum as copper, but there is much that supports this view. A joke of Cicero certainly proves *atramentum sutorium* to have been poisonous, and used for self-destruction. By Dioscorides it is described as emetic and purgative. Laguna tells us that as much as possible *calcantum* was purified from iron and lead to make it set better, and give it a finer colour. "*Calcantum*," he says, "is constrictive, pungent, corrosive, caustic, and biting to the taste, whence many judged it to contain a mixture of iron, copper, sulphur, salt, and alum, since it showed the character of each." Pliny ascribes to the *atramentum sutorium*

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a bright blue colour in solution, and yet it is now described as sulphate of iron in our dictionaries. In the *Liber Messué* we read that of *calcantum* there are two species, the *atramentum* and the *vitriolum*, and in the description of it when burnt, it turns yellow with a gentle heat, and then dark red with a fiercer flame. These things were more prized in medicine when taken from the bowels of the earth than when obtained artificially. They were then, as occurs with vitriol, always mixed or impure. As one of our authors says, "In nature there is nothing like purity, but only sharp wars and strong adulteries." Of Venus and Mars more or less. The words *vitriolum hermaphroditum*, *ceruleum viride*, show this to have been the case. In the island of Cyprus even the *asbestos* was olive green. Vitriol from the mines was sometimes like verdigris in hue or apple-coloured, or even like garlic, as this *calcantum* is described. We also read of calchantum album or candidum. Pliny has described *chalcitis* as clotted wool. In the apothecaries' shops there were half a dozen sorts. Our *chalcantum*, then, has a mixture of metals and a combination of medicinal agents. All these metallic earths have qualities in common. They are styptic and desiccative. Of such substances comparable to the *calcantum*, impure and equivocal like it, but all cognisable to the trade and faculty, there are named the *calchitis*, which colours the theriaca black; the Greeks also used it for *herpes* and *erysipelas*; there is the *Misy* from Egypt and Cyprus, also used in cutaneous affections, and *Soly*, and the *Marchesites*, and

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the *climia*, *succudus*, *tuttia*,* *diphryges*, *sandaracha*, and *cabrusia*, and the *calceitidis*, called *psorica*, much praised by Dioscorides, which is also a kind of copperas, and other several sorts; they were known to be unstable and allied.

In Lib. ii, Tract i, cap. v, Avicenna says that by the process of burning, the substances atramentum and *colcothar* lose much of sharpness and causticity, being thus freed from an igneous substance that pervades them.

In the chemical alphabet vitriol is expressed by the letter D, the best species of which is called *lonchoton*. This answers pretty closely to the word *calcanto*, as used by Villalobos. Green copperas in Arabic is زاج أخضر *zaj akdarun*. Sory (sūri) is a Persian word for the same, or rather for copperas generally. As time went on *calcantum*, green copperas, and Roman vitriol, became wholly identified with iron. This metal is much mentioned at an earlier date, even if we except this *atramentum*; but however used in medicine, by a curious contrast to modern times, its poisonous nature is much insisted on (see Laguna, his 'Notes to Dioscorides'). The yellow *calcothar* went by the name of *terra ferruginea*, and there is the *ærugo ferri* found among the *simplicia* of Avicenna; there is also the *scoria ferri*, which is "neighbour to *scoria æris*," and which, according to that author, is the strongest

* The *tuttia* or *tucia* of these days, sometimes a stone, seems for the most part to have been a climia often of silver, viz., that which was collected from the top and sides of the chimney, while that gathered from floor and lower parts of the enclosure was called *climia lithargyrum*, *spuma argenti*, *scoria argenti*.

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of desiccatives: it is evidently a most powerful astringent. There is beside the *squama ferri*, 'like *squama æris*,' says Serapion, 'except that it loosens not the belly, or does it more feebly,' and then there is the hematite. Three sorts of iron are described by Avicenna, of which *seneburucam* is, he says, 'neighbour to scoria of copper;' nor is it here amiss that we should speak of the iron that is got from old shipping, for that much sought for by the apothecaries, see Messué, and there are very many preparations of iron. The dose of calcantum for external use is laid by Rondeletius at half a scruple to a scruple, and with adjuncts of no activity it may be raised to one drachm. According to the same author, who was of the next generation to our poet, Mercury was used one part in four to even one to two for bad cases of syphilis. The mercury would appear, in this prescription, to be about one part in eight or ten. The Oleander of the shops is the Nerion or Rhododendron of the Greeks, called by them also Rhododaphne. For outward application Galen recommends it highly, and speaks of it as discutient and resolutive. Avicenna says it is good for hard apostemata, and *pruritus*, *scabies*, and excoriations, especially the juice of the leaves; and for pains of the joints or wounds. For *bothor* and *apostemata* the decoction is praised, but he makes no mention of the oil. It is a medicine of some account, and noticed by other authors. These drugs or medicines, if the apothecary is good and earnest in his art, will be infinitesimally divided, through the virtuous operation of his skill; by reason of their calidity, they will enter the body from without, and once within the

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frame, they move and are moved, *motus à foris*; they are variously cut, subtilised, evaporated by the natural heat, and so are led to the proper members, where they can act beneficially, and after derive from thence.

STANZA XLII.—We have seen, by the text of Villalobos, how every indication is attended to; there is nothing idle or superfluous, no patching, no make shift, no filling up with base material, all accessories fit into their place; Francesco Lopez is like Horace in that, and no word is ever in excess. We see him follow the rule of *epilogismus* in providing for the *sarna egypciaca* (see note to Stanza LII). The epilogismus, consideration, reflection, or judgment from analogy, is one foot of the tripod on which all medicine rests; of the other two, one is *autopsia*, what we now call personal observation, and the third is history. Such was the teaching of Serapion of Alexandria; such was the equivocal *triplex sermo* which Galen accused this physician of preferring to the ancient dogmata. By this rule or experimental habit Francisco Lopez turned to lepra for his first hints of treatment, nor to lepra alone, but also to sciatica, and joint evil, and bony swellings, and scrophulous and gouty ulcerations of the bones, and inward infarctions and imposthumes, without the body and within, and paralysis, and tremor, and skin disease; the world's long experience in all these gave him many hints as to treatment; these all served to guide him by analogy.

In this sixty-second stanza we have combination of mercury, sulphur, and arsenic, such as has been often used in medicine to break down cancer and the

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like; so in the book of Messué we read of that 'sharp medicine which the Arabs call adhichbardic,' and the mode of sublimating it. It was made of arsenic and mercury; such a combination with us is no novelty in syphilitic practice; it has been used through a long course of years, and is often mentioned for the yaws. In his choice of hellebore our poet seems not so fortunate, since it is chiefly advantageous as a parasiticide; the gum of pine is that which was chiefly used, and for a long time after as general intermede to divide the crude mercury; your garlic ash and incense* are excellent for that; and your aloes and myrrh, and *neguilla;* a famous medicine is this same, it breaks down nodosities, it removes, when joined with vinegar, 'every stain that occurs on the skin.' Avicenna praises it for warts, and for morphea alba, and *baras proprie;* for botor and apostema, hard wounds and ulcers; he used it too with vinegar. It is a high character which Pliny gives it. Nigella is a common plant in the East; it is not uncommon in Spain; the French name it *Nielle.* It grows to three or four feet in height, the stalk is hollow, with a

* Incense, gum *Olibanum,* was thought good for all excoriations or abrasions of the skin, as well as for visceral *apostemata.* In India it is now used with success for blind boils and carbuncle. According to Niebuhr, the Arabians have entirely neglected its culture. Its botanical origin is still doubtful, notwithstanding what is written in the *Asiatic Researches,* vols. ix, xi; and the fables of Herodotus regarding it are not wholly dispelled. Solomon might have told us more about it and the other 'powders of the merchant.' See Canticles, iv, 6. It was said to have much tyriosity (*tyriocitas*), and its fumes warded off pestilence. Some recent efforts have been made in France to restore it to its old position in medicine. See 'Indian Pharm.,' p. 433.

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rough cuticle: the leaves are rough, large, narrow, and pointed. The flowers are red in colour, sometimes white, with fine petals at the end of the stalk; the seed is angular, small, rough, and black, hence the word Nigella. If its reputation of old is well deserved, how large a blank would this plant fill up in our cutaneous Therapeia! Of the mercury in this prescription, the less need be said, since we cannot tell with certainty how it was killed. I have little doubt, however, that it was done after this formula of Messué: 'mix pure quicksilver with *calcantum*, and rub well, throwing in vinegar till the appearance of the quicksilver is lost. Free it from the vinegar by moderate heat, place between two pans, and stop the edges with clay, expose it to heat about as long as it would take to cook flesh, remove, and you will find much of the mercury adherent to the upper vessel, part killed, part not killed. Repeat this more than once.'

STANZA XLIV.—I have preferred the Spanish word *stercor* to the Latin *stercus*. *Haragone est stercus vaccinum. Hebel est stercus. Stercora diversificant secundum diversitates specierum animalium. Avicenna, lib.* 2, *tract* 1. According to Galen, all *stercus* is drawing and resolutive. According to "our authors" with S. vaccinum a good plaster is made for *sciatica* and *apostemata*; it is also good for burns, especially with *ol. rosaceum*. In all these authors there is a chapter apart, *de butyro*.

"If you know by your conjectures," says Villalobos, "*i. e.* by your prognostication, that stronger means are required, use the following recipe." First in order is the turpentine: this drug was very choice,

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it entered into the composition of several of the *theriacæ*. Of all the gums, says Serapion, this is the best; next after it comes mastych, next jambut, and so on: and he describes it white as nitre; "with *ziniar (viride æris)*, *calcantum*, *nitre*, and *æs ustum*, it is splendid for ulcerative *scabies*." All the gums are warming, and softening, and solutive. Turpentine is styptic and dry in the third degree, hot in the second. It comes from the mountains near Damascus, Syria, Palestine, Mount Ida, and northern Greece, Cyprus, and the Cyclades. The tree in Greece is more stunted, that near Damascus is of nobler growth. There are two kinds, male and female. The male is sterile. Resin of turpentine is pressed from the fruit as oil is pressed from olives. The tree has a green seed, it is a species of *lentiscus*, according to *Albucasin*, and the gum is called *botum*, *botin*, *albotin* by the Arabs, sometimes *botanus*. When the Arabs left Europe the scarcity of turpentine was much felt by physicians, the resin of the larch supplied its place, but was wholly unfit for the theriacæ.

Line 7. *Nitrum est baurac*, the nitre was of Alexandria. Pliny says it was made from the water of the Nile in nitre pits (*nitrarias*), much as salt is made. More of it, I should think, was got through the medium of commerce from India, and elsewhere. A large portion of these drugs came from Alexandria; they arrived there by sea or caravan from the island of Ormuz, in the Persian Gulf, chief seat of China trade. Thither thronged all the merchandise of the East from Malabar, from Bokhara, Samarcand, Cashmere, from Burmah, from Lassa in

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Thibet, from all the Malayan Archipelago, from Persia, and even from Russia, as well as from the cities of Arabia; in spite of all hindrance and piracy, the drugs, and all portable and curious things from these lands, found their way to the port of Barcelona. The nitre of commerce was classed according to quality and origin. The black was of the viler sort. The Armenian was the best, it was white in colour, with a blush of red, and the faintest tinge of purple. This was better and stronger than the Egyptian, the Egyptian than the African and Roman. Of that made in Europe, what was scraped from the walls is called best; it was also got from cow dung exposed to the action of the air, with urine and vegetable matter. Some plants, as the bugloss, were very well known to contain much nitre. There is, then, a peculiar propriety in mixing this large quantity of nitre with the stercus vaccinum, for the quantity is undoubtedly large. One of our authors says, *confert emplastro cum ficubus et stercore proprie hydropisi et dolori splenis.* The medicinal quality chiefly attributable to nitre is abstersion. It is exsiccative and incisive, good for fungus and virus (*resolvit virus*), and scabies, especially with vinegar. It has little stypticity; when used in plaster it draws the blood to the part. It makes a good cerate for paralysis, more especially when it shows amendment. Nitre is dry and hot in the end of the second; its dryness, perhaps, inclines to the third. With your strong-smelling fœnigreek it will make an excellent plaister, but do not let your spatula remain in the fire too long, and use a moderate heat.

Line 8. Nothing can exceed the meed of praise

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which Messué bestows on the Euphorbium; it is no wonder, then, that Villalobos should speak of it as "grand medicine." It fetches away all humours of difficult eradication from the hollow parts of the joints, it purges gross and viscous phlegm from the hidden corners of the frame, nor is there anything that comes near to it, *nec est res similis ei.* It suits bad affections of the nerves, especially of the colder kind, *mirabilis ad illud;* applied over liver and spleen it is highly corrective of pains in these members, of frigidity and ventosity; by infrication, its powder with vinegar removes *morphœa*, and taken internally, it is good for knots and pains. Avicenna recommends it for the joints, used with peppers, as an epispastic. When recent, the euphorbium is said to be hotter than ássa (*ammoniacum*), which is hot in the beginning of the fourth, but the gum, as we use it, is not so hot as assa.

Line 9. *Fœnigrecum*, or *fœnogrecum* of Pliny; he also calls it *siliciam*, *à siliquarum similitudine*; *telis* of the Greeks; the Arabs call it *alformes*, *alfoloas*, *fasol*; called *olba* by Serapion, who says it is hot in the third degree, but this is scarce acceded to by other writers. It is discutient, maturative, and detersive. *Paregoricum est.* Used in poultices, in glysters, and for the eyes. With vinegar and nitre it formed a celebrated plaster for apostemata and induration of the spleen. Modern surgery has chosen to dispense with it. I have found it sometimes useful, especially with the tedious results of inflammation of the breast in a poorer class of patients.

STANZA LXV.—*Yreos:* this is the name which the Iris of Florence bears in mediæval medicine; in

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Messué, in Ambrose Paré, it is thus. The virtues of this drug seem exaggerated by Dioscorides, who describes it as good for exposed bone and nodosities, sores and fistula, cutaneous eruptions, rheumatic pains. It was also considered to act upon the nerves, controlling spasm and relieving contractions, and it was employed in glysters for sciatica. An oil was used as well as the powder of the root. According to Messué, of the flowers, the white alone are medicinal.

Line 2. *Guesir est oppoponax.* It is the least objectionable in odour of all the fœtid gums. Hot and dry in the third. I find it not mentioned in the 'Indian Pharmacopœia.' In general terms it comes from Turkey. Geoffroy says we know not from what plant oppoponax is derived. Galen affirms with authority that it is the juice of the *panax heracleus*, and so leaves us utterly in the dark. Avicenna has undertaken to describe the plant minutely; the rest I leave to modern botanists. This gum is said by Messué to be good for pains in the joints, for *apostemata* and *bothor*, for wounds and sores, and *ignis persicus*; used also in plaster for the spleen. The prescription has an amazing current, especially about the middle of this stanza; he inclines you to believe that such things are always to be written in rhyme; instead of being troubled with the leading word "*yreos*," he seems delighted with the little difficulty, and throws off the half stanza with a grace that is truly delightful.

Line 8. *Azeite unfancino; oleum omphancinum*, corruption of *omphacinum* from the Greek *omphakion*, *cum ex immaturo exprimitur*, see Pliny, 12, 17, 60, who tells you all about it, and speaks of its various

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uses in medicine. It is also praised by Dioscorides. This oil is styptic, it sets loose teeth, eases the tooth-ache, comforts the stomach, and checks diaphoresis. It is now no longer kept, and it appears to have been rather an expensive thing. This oil was pressed from the fruit when yet white, or upon the turn of the colour to green, long before it was fit for eating. The same with grapes, when about the size of a small pea they were dried in the sun, pounded, and made into pastils; this was also called *omphacium*.

Line 10. I have undertaken to produce this poem as I had it, and as it was shown to my friends in the year A.D. 1869. Since then I am half inclined to see an error in the rendering of this stanza, and hasten to be beforehand with the critics. It appears to me the words *armoniac y bedelio con esto* may intend the sal ammoniac with the bedellium. The amended reading would be thus:

And salt of biting nature should be added unto it,
Armoniac, and therewith the bedellium.

The correction is made but late, nor do I feel either way sure about it. Many old authors have written *armoniacum* for the gum; but I scarce dare suspect Villalobos of this fault, since the two are so distinct in Avicenna. The information given concerning *sal ammoniacum* or *armeniacum* is certainly inferior to what I have found in these authors concerning the ássa or ássak, for so they call the gum. Galen (*de comp. med. sec. gen.*, lib. vi) calls ammoniacum the chief of emollients. I find, however, in Zedler, '*Lexicon Univers.*,' under the head of *Salmiak Geist*, the description of a plaster of old date containing sal. ammoniac with the gum ammoniacum, and other

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gums and components. The error, if any, may, I hope, be thought on either part venial.

Bdellium. There is found a great deal about bdellium in these writers; it entered not only into the composition of several famous plasters, but was also an ingredient in the theraicæ. One is inclined to think, from the high opinion which they had of it, that the supply of the best bdellium, viz., the Arabian, must have fallen off somewhere about this time. With many drugs, ingredients in the theraicæ and confections, we know this to have been the case. Just as with turpentine, the conquest of *Scios* and the *Cyclades* by *Barbarossa* diminished the supply, so the invasion of Persia by the Turkish host, their occupation of Bagdad and Syria, and the diversion of trade from the Levant, through the discovery of India by sea, would effect a diminution in the supply of drugs from all intermediate countries. The pure white clear bdellium was from Arabia, the second best, the red, was from India, the darker sorts from Sicily and Africa, the last being described as black. It would appear that many parts of the world could supply the bdellium. The tree which furnishes the Indian sort is known to be indigenous in Scinde. Avicenna refers the whole to one species, the *palma silvestris*. Two sorts of bdellium are described in medicine, the B. judaicum and the *B. de mecha*, the last, according to Avicenna, is yielded by the fruit of the tree. Gum bdellium melts with the heat of the hand. Campegius says that at Lyons some twenty or thirty years after this date, the gum was confounded with myrrh, and both of them were obtained with difficulty. This gum is contained in the Empl. de

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Melilot. of Messué and the Ung. Apostolorum of Avicenna; it is found in the Mithridata, and was used in form of pill.

STANZA LXVI.—In the *Fen.* xxii of Avicenna, he has several chapters on diseases of the joints; in the fifteenth chapter he describes various narcotic applications, opium, henbane, lactuca, *mugath* (the wild pomegranate), and the fruit of the mandragora, boiled in vinegar and mixed with butter. Wine and milk are also employed. All these were variously mixed with aloes, crocus, storax, and the black gum *hypoquistados*, for plasters, cerates, epithems. Also the *psylium*, or pulicaria, steeped and swelled in hot water, and added to *ol. rosaceum*, was smeared upon the joint.

STANZA LXVII.—Avicenna disapproves of warm bathing in diseases of the joints, except with reservations that are not very plain, but which seem to apply to mineral waters. About the time of Villalobos the use of mineral springs and of bathing began to be more scientifically studied, chiefly through the attention given to the subject by the learned monk *Clement de Gratz*, A.D. 1495. The innate heat was considered so much an accessory in the operation of medicines that bathing must have had much importance. *Guy de Chauliac* had already laid down the rule that warm baths were not well employed in the beginning of the disease, at a time when the humours were yet crude. That branch of bathing which relied on the addition of herbs for its efficacy, has less literature than one might expect. The herbs used were very much of the sort commonly employed by the people as vulneraries, of which no less than

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forty-five are enumerated by Paré. There are here but some dozen herbs mentioned, of which only two seem to call for notice. *Abrojo* is the *Tribulus* found in Dioscorides. I have translated it by the name of caltrops, as being commonly so rendered in dictionaries. The *Tribulus terrestris* is a trailing hardy plant with a yellow flower, a native of Spain and the south of Europe; it is an annual, and was introduced into this country, according to Lindley, in the year 1596. I shall not give a more particular description, as it is sufficiently designated. The *apio* or *apium* I have translated smallage, the wild or garden parsley, *selinon* of the ancients, the herb or root, most probably both. Paré prescribes the *radix apii*. There is a general agreement seen here to the medicated baths or *semicupia*, which Ambrose Paré recommends, as well as to his fomentations, and gargles in the character of the herbs employed.

After bathing, the ancients generally entered a heated chamber, as may be seen in Galen, in his methodus medendi; in the present instance, the patient has to sweat between the sheets. In the close of the fifteenth century the stews or sweating baths were common enough, and with the Moors they were an intrinsic institution; at the date of their expulsion, baths were forbidden by law in Southern Spain. Some forty years ago there was not a single bathing establishment in Madrid. Warm baths were then re-introduced by a Frenchman; but also throughout Europe the arrival of syphilis dealt to public baths a heavy blow, from which they have never yet recovered. The earliest known writer on syphilis, Conr. Schellig of Heidelberg, gives warning against

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them.* The subject has been fully noticed by Hensler, page 8, but, I know not how, it seems to have been unaccountably overlooked. The administration of mercury by the means of the sweating bath recently revived, is of very old date in medicine. A very interesting account is given of it in the work of one Chevalier, a French surgeon, in the reign of Louis XV, in a small duodecimo, contained in the library of the Med. & Chir. Society. The work professedly treats of the diseases and curious natural features of the Island of St. Domingo; but it is very interesting as to this point of the administration of mercury.

STANZA LXVIII.—From the looseness of its texture and from its being the gathering place of the melancholy humour, it can hardly surprise that the spleen should be early obstructed. Hence the black colour in the face, the black stains, old wounds and bad dreams. These last connect the complaint with leprosy and the melancholy humour with cancer. The attention drawn to implication of this viscus by Virchow, renders further comment unnecessary. Villalobos is the only one of the ancient syphilographers who notices it.

STANZA LXIX.—In the heading he calls the hardnesses *durezas* (*durities*); in the first line of the stanza *durujones*, which is less absolute: there is no strong line between them from *exostosis* to gummy tumour. Next, he says, "that all the patient's cure turns upon the regimen," which is the 'cornerstone' of the treatment;" how true this is! but if here he shows

* Per contactum infecti mediate vel immediate alias inficiunt personas.

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an angel's wisdom, he is fated very soon to fall into error. The patient is warned against things of "bad nutriment;" he no longer uses the word *mantenimiento*, the present having a more special relation to food taken by the mouth, such as salt meat, fish, and *oruga* already mentioned, which was the *diasatirion* of the peasant and plebeian; and then he says, "avoid women and bad thoughts." Here you have a touch of the false and mischievous notion that the sin of concupiscence, or to speak more plainly, the lusts of the flesh can produce directly and *per se* a corporeal lesion. This doctrine, no doubt, was convenient enough for priests, who work by the rule that any stick may beat a dog; it peeps out a little in "amor hereos;" it is far more strongly declared in the name of priapism given to the bubas by many syphilographers, and notably by Van Hutten. The other warnings as to choler, etc., are intended to economise the humours. Gout, we know, is oft induced by care and watching and trouble and weariness.

STANZA LXX.—Gentilis, commenting on Averrhoes V. *Colliget*, makes a fourfold gradation in food, just as there are four in medicine. According to Averrhoes, human flesh is "*cibus temperatus*," the flesh of partridge, goat, and capon, are of the first grade, chicken of the second, in the third comes butcher's meat, in the fourth are meats whose substance is gross, ill suited to the human stomach, or which are salt, acetous, or lubricative.

All "our authors," I am happy to say, attend to the kitchen department. We have chapters on cocks and hens both old and young, and broth of the same, and chapters on partridges, hares, and geese, and

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chapters on eggs and butter and milk and oil, and sea and river fish, and chapters on apples and pears, olives, peaches, and spinach, and chestnuts and French beans and asparagus. River fish of small size, as exceptions to the general rule, are approved by Fracastor, as well as by Villalobos. The insufficient nutriment caused by fish diet and the fasts of the church was the prime source of leprosy in the middle ages, just as *pellagra*, now in Italy, has for its cause the innutritious character of the Indian corn so much in use there. The other precepts are excellent. Especially is he well inspired when he says that all of subtle digestion and of good nourishment is suited to this complaint.

STANZA LXXI.—All this is squared according to rule and norma; laid down in the chapters of Avicenna. After food, drink. Mineral water is famous for it, *muy singular*. Why red wine? The reason is this: Fermented liquors of a dark colour are less heating than the white. Gentle reader! explain to me this. Why can a patient with scabies take porter with impunity, and yet not drink of ale without repentance? I cannot explain it; it is one of those great facts on which the humoral theory was made to rest. In these days of advance, is it permitted to say that cyder and *sauterne* are heating? or must we use some choicer phrase? And since order is excellent in all things, he cannot omit the formula of prescribing the hour of meals, for Avicenna has a chapter upon that, which follows after regimen in meat and drink; it is not of strict observance in this complaint, and so we draw towards an end; "A walk before his meals will be good for him." Labour

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must go before meat, as our master Hippocrates has said.

STANZA LXXII.—The finis to the *Sumario.* In this stanza we perceive no infringement of rank; no self depreciation. The cousin of King Ferdinand is informed that a "sum of large value" is placed at his disposal.

STANZA LXXIII.—A judge, he says, maybe a critic or umpire, has given it as his idea or opinion, *su consideracion*, that the complexion of medicine is equal, punctual, absolute. This contains most subtle argument; a question not to be debated in an hour. In what is briefly here set down I subject myself to the correction of accomplished physicians. The question is this, and I look at it from the point of view of Villalobos, May a medicine be *æqualis? i. e.* punctually attempered to the body on which it acts, or in correspondence with which it acts. Under such circumstances or relations would any operation ensue, any change or transmutation in the body? Would the body not rather be upheld and preserved in its *status* and degree without suffering any change whatever? A medicine which is *æqualis*, can it be a medicine? The question is beyond measure intricate. The nature of heat and its varieties, concerning which neither Galen nor Averrhoes, nor Avicenna, were agreed, is much involved therein. A man is hot through temperament, punctually hotter than his fellow, or hot with fever heat; you carry a clove in your hand all the livelong day; it is hot in the third or at least in the second degree, you feel from it no heat, it imparts to you no sensation of warmth. You give it to a man in a fever by laying it on his tongue, he swallows it, or you give it so to

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one who, in his temperament, is hot; in both cases and in proportion as he was hot before, such a one will be inflamed or disturbed by heat; but if these qualities of heat were the same in kind as in degree, in the medicine as well as in the subject, from the approach they have to one another, and the natural consent that is between them, the change or transmutation in the body should be insignificant or none.* Such, however, is not the case. It is clear, then, that there is no proportion or strict conformity between the heat which is in our bodies, and that which resides virtually, or as some say, formally in medicines. The critic of Villalobos would seem to contend that the medicine, while engaged in act, is punctually† hot like the body which it heats, or which is heated by its contact or its presence. He has no warrant for this. Medicines act in virtue of their specific form. He is, however, of opinion that they act absolutely, just as the primary qualities operate, the hot, the moist, the cold, the dry. Now medicines are mixed substances, not uniform like these; medicines have not to act on a passive substance, but

* For exactness sake I will give the words of *Thomas de Garbo*. "Illa quæ sunt similia in forma et in gradu, et hoc si prædicta similitudo sit formalis, sive virtualis, non se transmutant. Nam cum passum factum est simile agenti, sive similitudo sit formalis sive virtualis, non ulterius procedit actio, aliter nunquam cessarit actio et agens possit plus producere, quam habeat in virtute quod absurdum est."

† Punctually. The word *punctualiter*, not very classic Latin, is extensively used with regard to heat in medical literature. We may take punctual heat here in the sense of sensible heat, but we must recollect that in these days an extensive use of the terms sensible heat and absolute heat did not as yet prevail.

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rather they are acted on, the body is really less passive than the medicine, inducing in this last forms and acts which are not absolute in it. The body indeed is an equivocal agent; as such, it may be likened to the sun, or to the fire, by which one thing is bleached, another blackened. Nevertheless, although we cannot allow medicines to be as the first primary qualities, yet since they perform in our bodies effects which are approximate to those produced by the primary qualities, and that determinately, we may concede an analogy, yet are they not like them every way, nor are medicines absolutely active as such agents are, but rather comparative as regards the diversity of their effects when universally applied.

STANZA LXXIV.—Here we have the question of divisibility in the primary molecule. The unsure axiom upon which Dalton's theory is made to rest is here contended with. I say unsure, though it seems capable of all but direct proof, which is certainly wanting, and to all appearances is likely to remain so. Where the translation says "split in twain," the original says "part" or divide.

This is the whole of the gloss on the poem. My work will be thought affectedly onesided and incomplete, if I refuse to say anything about lesions, which are not syphilis, but which are liable to be confounded with it, or rather which have been and are commonly confounded with it. In spite of the protest of John Hunter, who declares that syphilis, no whit more than scabies is venereal disease, and other complaints might be mentioned, the habit has always been to treat of syphilis and venereal in one. Had it been my object to write a book wholly devoted to the

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illustration of syphilis, I should certainly have added to this work a reprint of the excellent description by Philip Barrough, his 'Method of Physic,' 7th edition, 1634, of which I give a few passages. It is capable of corroborating and shedding light on many points insisted on by our author, which have been little attended to by modern writers. I shall confine myself, however, to narrow limits, giving only two stanzas from the '*Sumario de la Medecina*,' which treat of apostema and ulcers of the genitals, as mentioned page 26.

There is only need to say here that the description corresponds exactly with what we find in Avicenna, Celsus, and other authors, and though the metre is uncouth, we hope the argument will be found convincing. The first stanza quoted is the eighth of those in the *Sumario*, which treat of diseases of the generative organs.

On Apostema of the Genitals.

If on the genitals there come an imposthume,
We recognise them now as we knew of them before,
If hot, we bleed and use repercussives for them,
Refrigerative mucilages made with gum,
Rose oil, and wash with water and some vinegar ;
Purge with meches, and apply yourself to bring the matter on,
Bean flower mixed with honey is good to mature it,
For resolutive make use of the diacolon,
If it's cold, and the pain be little or none,
Without recourse to bleeding or defensives you may cure it.

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Here intervene four stanzas on hernia and its divisions.

On Ulcers of the Virga and Genitals.

On the virga and the parts companions to it,
Inside and out *postillas* and ulcers do appear,
Just like as in the kidneys and bladder you may get
These parts in ulceration, the above you will treat,
To cool, and to cleanse, and to dry should be your care.
The camphorated ointment is the first you will choose,
And then the litharge ointment and the green you will try,
The aloes in decoction with some water you reduce
As wash for it, and then of tuttia make use,
Or some such application as is counted on to dry.

These were lesions or diseases which existed in Europe before the year 1493, at which date syphilis was first engrafted on European society; a dreadful class of diseases they were, and most severe in their occurrence; whoever has seen them in their modern propagation, and in their occasional excess, is forced to lay some restraint on his pen for fear that he may seem to exaggerate the gravity of their incidence to the less informed. In their more aggravated aspects nothing can be more harrowing to the beholder; the sense of pity is fairly surprised, but still this is not syphilis; this is not the disease we have treated of in the poem which precedes. We shall not here reiterate arguments as to the origin of syphilis from beyond the seas, which will ever want completeness, until care is taken to secure to the libraries of this country

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the possession of evidence, which alone can set the question at rest. It is a point of no small importance to the public health; nor can one very easily understand the general indifference that is displayed about a subject, which, as Andral has expressed it, is the keystone of pathology. It forms at present the largest hiatus I know of in literature, and to repair it may possibly engage my future labours. In the mean time I shall venture something in correction of an argument which has been forced on my attention since the publication of my papers in the year 1867. It appears that a French gentleman has found in the 'Municipal Archives' of Paris, that a proclamation proving the existence of *La grande Gorre* had been made soon before the return of Columbus from his first expedition. Putting aside the question of dates, in which this gentleman, on a former occasion, has not shown himself well skilled, this answer may very well be made by one who reads old French, though he has not the advantage of being a Frenchman. The word *gorre* is of the old language; it means a sow, as any one may read in the *Complément* to the Dictionary of the Academy.* It also means a filthy and libidinous woman; thus the French call their queen, Isabeau of Bavaria, *la grande Gorre*, and it may mean a loathsome disease, such as could scarce fail to reign in Paris at a period when there was an enormous afflux of strangers and of soldiery. The counterpart of which has often been seen. The epithet *la grande gorre* is descriptive, not distinctive,

* See also the elegant edition of Rabelais by the *bibliophile* L. Jacob, otherwise Paul Lacroix, note at bottom of page 244. 8vo, Paris, 1862.

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at least not originally so; it answers exactly to the *muy vellaca* of Villalobos, and it was the same with the *bubas* and the *pockes*, they were descriptive, not distinctive epithets. No one, I suppose, will conclude that syphilis existed in the days of Isabeau of Bavaria from such scanty proof as this; and when Dante, the Florentine poet, in his divine comedy calls Philippe le bel, *il mal francese*, the French disease, or bane of France, will any one undertake to prove from thence that in the thirteenth century the disease we call syphilis already was in Italy? See Div. Comm. *Purgatorio*, *Cant.* vii.

There is indeed no theory admissible, but the derivation from America, to account for the origin of syphilis. A man must be poor in literature, or mean in understanding, or at least scantily informed, to be persuaded otherwise: but the question has been so "meddled and muddled" by incompetent hands that the general current of opinion seems turned the other way, and one has rather to excuse oneself for knowing the truth on a subject of so general concern. Barrough was contemporary of Rawleigh and Shakespeare under the reigns of Elizabeth and James I, at a time when Spain was the great nation, and he was in the way of learning all about it, at a time also when the desire for knowledge was more fresh and sincere than now, and communication with the Continent was put to better use than has ever been the case in our time. Liberty of the press seems to serve us now far more feebly than the impress of a few earnest minds in those early days. So far from being well informed as to the past, we have but a weak and shadowy acquaintance with the present in all of con-

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tinental work, and many of our fine old translations are now lost, or perishing. The following is Barrough's account, which only needs amplication to be altogether faultless. "This griefe," he says, "hath gotten many names, and so many as come to my memorie I will rehearse, and where they were first begotten. First the Spaniards borrowed it of the Indians, and brought it home instead of their gold, and afterwards, Charles the Eighth of France, who was a man of great power, and delighted much in shedding of blood, sparing neither man, woman, nor child, insomuch that he spoiled a great part of Italy, and subdued the Dukedome of Millan, with great hurt, ruine and spoile to all the Commonwealth of Florence; and at last he came to Rome and Naples with his whole hoast, spoyling all as he went with great crueltie: and *for his hire*, this disease began first to shew itselfe plentifully among his people, and specially because his souldiers were much given to venerie. The Frenchmen at the seige got the buttons of Naples (as we terme them), which doth much annoy them at this day. But the finding of this grievous sicknesse was brought into Spain by Columbus at his coming home, *so that all Christendom may curse the King and Columbus*. This griefe, *at the first*, was so extreme, cruell and mercilesse, that it molested those that were infected therewith, even the head, eyes, nose, palate of the mouth, skinne, flesh, bones, ligaments, and *all the inward* parts of their bodies. *Then Columbus travelled again*, and brought with him little gold, but all his men were well infected with this griefe, insomuch that the Physitions of those dayes did not know what to make of the griefe, nor how to helpe

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the people. So for want of knowledge many were spoyled. After (as I told you before of the seige of Naples) the Spaniards for the friendship they beare to Frenchmen, sent to them of their curtezans infected with this griefe, minding to let them have some of their jewels, which they brought out of the Indian countrey. The Frenchmen (not knowing their kind hearts) (fell in love with them and being ravished with their beauty) dealt with them to their great cost and trouble to this day. Now to the variety of the names. First, the Italians call it *morbus Gallicus* and some call it *variolam Gallicam* because it first appeared among the Frenchmen at the seige beforenamed. The French call it *Scabiem* or *Morbum Italicum,* because they had the victory and for that they had this sicknes. And they also call it *Scabiem Hispanicam* because the Spaniards first brought it out of the Indies. The Germans call it Menium (Milium); why they should so terme it I know not well, unless *Menium* do signify the parts affected with this disease. Some of them call it also *Scabiem Hispanicam.* In Spain they name it *morbum Neapolitanum:* the cause I told you before. They of Naples call it also *Patnysa paradneptur,* that is the proper name at home in India. Some call it Violentum morbum. Others some call it Pendenlagra (Pudendagra)," etc.

The description of the disease given by Barrough shows how deeply the writings of Villalobos and other earlier observers had influenced his successors. We find here described in almost the same words as in the poem on the bubas, the lassitude, *lithernes,* and slowness from infection of the natural spirits in the

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breeding of the complaint; pain in the head, and somewhat in the limbs, the colour of the face changed, "You shall see the most beautiful, lively, clear complexion in the world, in three or four days space changed into a much worse course than before, and what matter of motion this is, I cannot tell. But certes, their face differeth not a little from that it was before, the colour is altered, the lively spirits in the eyes be changed, the mouth, lips, and cheeks sometimes are changed from their natural comelines. And marke you this (which may further your judgement and knowledge therein), there is under the eyes a wan-coloured or blewish circle, such as appeared in women when they have their natural purgation, or before. There is also sadness of the spirits, and fever sometimes, but this seldom chanceth." He allots to the primary incubation the period of eight days or so, instead of the "many days," as left indeterminate by Villalobos. After this come on "most *orgueilous* and extreme pains," nodes and "atheromatous tumours with a tough slimy matter;" the Bombata or gummata, and sometimes asthma ensues, which he then holds to be past all cure. "Some by procuring a great sweate have been cured, but this was in the beginning of the disease, in very strong bodies, and yet it hath not had in all such great successe neither." He purges with senna, epithymum, hermodactyles, *Confectio Hamech*, *diacatholicon*. He says that "the very first way that experience found out to heal this disease in Italy was by the *argentum vivum*. For when this disease began to spread in that country, Chirurgians attempting all things for the cure thereof, because they have read the quicksilver should be of

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great virtue against an old rebellious scab (for at the first coming of the disease it had always ulcers joined therewith), they thought it good to try the *argentum vivum*, and that with good successe," etc., but he commends not the medicine, and suffumigations he mislikes. The *Ol. Omphacinum* he administers by glysters as astringent, oil of myrtle or Armenian bole, the *lapis Hæmatitis* therewith. His ointments contain armoniac and *bdellium*, with other gums, *cerussa*, *lithargyrum*. Burnt Roman vitriol, *minium*, quicksilver, turpentine, lard, etc.

The precipitate is given by the mouth, seven or ten grains at most, with aloes, mastych, and the like. But 'there is a more safe way of curing than this, by *Turbith mineralis*, which the chymists have invented instead of *precipitatum*': it is given in doses of eighteen to twenty grains, twenty-five at most, with *mithridatum* or conserve of roses every third day, and the patient is made to sweat; on the other days *mithridatum* is given alone, so onward till his mouth be sore. This would be red precipitate rendered milder by repeated digestion in spirits of wine. The Barbarossa pill already spoken of, consisted of mercury, with a small quantity of rhubarb and scammony formed into a mass, with lemon-juice. But it is full time that we part with the bubas and their cure. I believe I should have acted more in the spirit of the age had I excised from the poem all that turns on the use of drugs: but I have no idea of such timeserving. My object has been to make our young physician understood. I have therefore given the same extension to this part of the commentary that I find in the poem. I am even inclined to see

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an identity between the language of old medicine and that of modern science. For are we to suppose in medicines another path and mode of action from what is recognised in food and wine, and these act in virtue of their calidity. It is true we do not speak of actual heat and potential heat, but actual energy and potential energy are of the very language of the day. Heat which is stored in plants, and which they derive from the solar beam, spreads warmth through the animal frame, or becomes converted into force, which is displayed by animals in all the acts of their existence: and this the ancients understood, all this they have written down. Let us cease then to regard them as men whose reason was perverted by bad logic. For where in books of logic do we find any hint of such things? It is only in medical literature that arguments of the kind are to be found.

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THE TWO DIALOGUES,

NAMELY,

THE DIALOGUES ON TERTIAN FEVER,

AND ON

NATURAL HEAT.

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THE DIALOGUE

ON

THE TERTIAN FEVER.[1]

THE question, *Villalobos* says, was suggested by *Señor don Estéban de Almeyda*, Bishop of *Astorga*. He has some doubt whether this lord, who is a great master of learning in all its branches, will be satisfied with such plain and unrefined doctrine as he now offers for his acceptance.

METRE I.

Say, how comes it that the tertian
Each third day is surely brought on,
And how in the same way the quartan
On the fourth doth get reversion.
In holiday and when not seen
Where flies it? where lies it hid?
And tell us when it back hath slid
Who show'd it the way to its inn?[2]

GLOSS.

Villalobos.—'Tis a frequent subject of discourse, no less with the well-informed than among the lowly and illiterate, how it happens that the tertian, and it is the same with the quartan, will scamper off from duty done to take its play elsewhere, just as if it never was intending to come back any more; and then, behold! after a certain set time, there we find it once again, with the selfsame features which it previously had, guided as one might think by

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mind and intelligence, with watch in pouch, or time-piece at command, to keep the assignation punctual. And though one should go a journey over a large extent of country, the calenture takes the journey too, and at the end there we have it complete, without its losing on the road one tittle or hair of its former semblance and portraiture. The distance matters nought, and suppose we head it by a day, on the very next back it comes again at its own true hour, or mayhap a little earlier than its wont; so indeed it makes the saying good, that flight requires both forethought and reflection, and that when awkwardly performed it is fraught with mischief and much danger. I shall endeavour my best to declare and to make plain this matter in the purest of Castilian speech, which will not be that of Toledo, though in that town they fancy their phrase to be the very pattern for Castile; and it is no marvel that they do so, from the great nobleness of the cavaliers and ladies who live in that fair town. But still they ought to reflect that in all countries and nations the language approved by art is the most commendable of all. The best informed people of Castile would scarcely say *hacien* for hacian, *comien* for comian, and so of all other verbs that are of that conjugation; nor do they say *albaceha* nor *almutacen*, nor *ataiforico*, nor other words which sully, and, so to speak, defile the polish and clearness of Castilian speech.[1] This digression I have allowed myself, though little *à propos*, in order that the ladies of Toledo may not mistake us for clowns from this time forward. And coming back to the point from whence we started, I will say that I could wish this subject were declared by method of question and reply, so that no doubtful proposition could fairly be advanced that should not be here brought under view, and so if possible satisfied.

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Let now the one that is the questioner be my pupil here, *Acevedo* by name, and I will answer as I may.

Acevedo.—Fain then would I know whence the humour proceeds that causes the interpolated calenture, and also where the thing departs during play hours, when off duty, so to speak, in enjoyment of its holiday?

Villalobos.—As to the humour which makes the calenture, this generally proceeds from the veins, which drive it forth and cast it away from them as a thing of inconvenience and noisomeness.

Acevedo.—And in what way do they drive the humour out?

Villalobos.—Much as we see the sweat expelled, which is pressed quite limpid from tiny pores, for such we call these water holes; the whole body teems with such pores, which serve for much use and necessity. To our eyes they are invisible, only Nature beholds them with her great providence.[1] None the less do we recognise them through certain conclusions we arrive at, one of these being suggested by the oozing of the sweat; which indeed we see poured out, yet know not whence it comes; and in some such way escapes this evil humour from the veins; and as it travels in the body here and there, the parts near which it goes are ill inclined to harbour it, being little comforted by the approach of so noisome a guest, and indeed they drive it off with all the power they command, and thus from station to station it needs must pack, till it can find some roomy hollow spot where it may nestle down, and in which there lies no such power of resistance as may serve to fence it off and send it flying.[2] And when this humour travels over parts endued with more of feeling than the rest, such are the shoulders,

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bosom, and ribs, then there is a sense of cold experienced as if wine or water were spilt thereon, which, even if warm, thrown on those parts would create some shiverings.[1] And no sooner does the humour settle into the part receiving it, than it begins forthwith to putrefy, and so you have the calenture. As long as the humour is on its way and stirring, even so long does the chilliness endure, which does not come all at once, but little by little at a time, nay, anon so leisurely, it seems all in one piece with the calenture, continuing to the very end along with it, and lasting so long as it may last; for you must understand that the portion of the humour that is in advance is the first to heat; no sooner is it gathered in, than it heats at once: and a further part of the humour being on its way at the very same time, this is productive of cold, as aforesaid; thus the body is suffering from cold and heat at the very same moment of time. All which will be made more clear as we proceed.

Acevedo.—What kind of faculty is this by which the veins throw off such evil humour? and what directs them how and when they are to expel it? have they knowledge and forethought appertaining to them?[2]

Villalobos.—There is no bodily organ, no part or member, nay, nor any plant, but what has four natural virtues appertaining to it, through which are performed its natural operations, without the sensitive anima or the reason being any way concerned.[3] First in order is the attractive virtue, through which the part absorbs and appropriates to itself such sustenance as it stands in need of for its growth or repair; and this is what we see in a tree, at whatever depth the humidity lies, 'tis drawn up to its radicles; the root conveys it to the trunk, and the

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trunk to the topmost boughs. The second is the retentive virtue, by which the part detains within itself the sustenance of which it is fed, until such time as digestion is effected in the same, and so the matters are extracted therefrom, which to it are material. For every day we lose somewhat and all along disintegrate, so that there is much need for repair, and that for this we go on adding little by little. The third in order is the digestive virtue, through which the member, part, or organ performs the act of digestion on what is submitted to it, adapting such with skill, and appropriating the same to its proper substance. Now the fourth virtue is the expulsive, by which the member casts off and drives away from it all that is prejudicial and superfluous. And this it is which we are nearly concerned with in our inquiry, and which I intend to dwell upon for our better acquaintance and nearer familiarity therewith. We all know how the stomach is fed, nay, satiated with the food that is swallowed, but all it requires not for its use is urged on and delivered in a forward direction. True, we know not how the thing is done, the fact we know full well; but yesternight after supper, this stomach of ours was full, and now, on the morrow, it is empty again, unless in the mean time some fresh food hath been taken; and the *matrix* in women thrusts the offspring before it, when this has arrived at term, and its lease of occupation has run out. All which nature effects solely through the expulsive virtue, a natural faculty which resides in every part of the animal, and in this way we see the kidneys are delivered of a humour ever neighbouring on destruction and putrescency, and the brain gets rid of rheum, and the bladder of urine, and so of every other part.

Acevedo.—All this may be clear enough, but let us

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come to the front of the argument. You seem now but beating the bush, or would you have us view the question from afar. I must bring you to the point. The inquiry is only this: Where does the calenture go hide itself during the period of exemption in the tertian, and in the quartan also, and how is it able to return on the third and fourth day?

Villalobos.—I have already said there is a humour which is cause of the tertian, and the same is true of the quartan, and also I have said that commonly the humour doth issue from the veins, and at first it is hurried through what parts it visits, until it stays in one of them that hath room and capacity for it to settle in; we have now to submit that no humour sets up calenture, so long as it continues sweet, but when putrescency ensues, then indeed it burns like any dung heap, and as it burns so it steams, and some fumes do then arise from it which ascend up to the heart.[1] Now the heart is an oven, wherein is formed all the heat that has to be imparted to the body, and it now burns the higher, from the humour being just such fuel as is apt to flare and create more heat and fire than is necessary. This heat is conveyed and spread from the heart outwards to all the members and divisions of the body, its track lying in the pulses, for these have their origin in the heart, and even as they divide they spread, and are distributed through the frame; in this way all the members participate in the heat, and likewise in the calenture.

Acevedo.—But how is it no calenture was seen so long as the humour was included in the veins?

Villalobos.—Just so, because not putrefied.

Acevedo.—If not putrefied, why was it then expelled?

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Villalobos.—Because it was so far disposed, so far on the road to corruption that it lay beyond nature's scope to put it right again, and with this bad condition making it distasteful to the veins, they no longer endure its presence, but they drive it forth with such passion and impetus as the stomach displays when it has the sense of something unfriendly to its nature and discordant to its health; for in such case it makes itself both judge and master, and with effort and much violence drives all before it by vomiting, as we see sometimes when a rough purge is taken, or when too, by mischance or otherwise, some poison is imbibed. Just so it happens in the veins, by an instinct which is natural to them, when they feel this humour to be on the point of turning bad, having discovered it presently to be uncongenial to their nature, they summarily eject it, before it has yet time to putrefy, and all other parts as it courses along do fence it off and drive it from them as an evil guest that brings pestilence to their doors.

Acevedo.—The veins, then, as it would seem, do never contain humours that proceed so far as to foulness and putrescency.

Villalobos.—Aye! but they do. May be they are not so strong as what they have to contend with.

Acevedo.—And what then?

Villalobos.—Why then you have continued calenture, which lasts till recovery or death, and if the humour is choler, then you have continued tertian.[1]

Acevedo.—If continued, how tertian?

Villalobos.—Because it retains the proportion and similitude of tertian with aggravation, on the third day.

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When the humour is phlegm you have continued quotidian, which rises and sinks every day; and if melancholia, you get a continued quartan, in which, on every fourth day, there happens the same, and if it is blood, then it is pretty even all along.

Acevedo.—A taking doctrine.[1] But once more now, what becomes of the calenture of the tertian in its interval of ease or holiday? where plays it hide and seek? how does it return to time and place? [2]

Villalobos.—The calenture when it is on holiday, as you say, is just nowhere; it nowhere exists, for every day when it occurs it burns itself out, and exhausts the humour that created it. It comes to an end just as naturally as a fire for want of fuel, which dies away and leaves nothing but ash.

Acevedo.—How then, if the humour is consumed, can the calenture ever recur?

Villalobos.—Precisely from the bad quality of that which is held in the veins.

Acevedo.—How is that? did you not say but now that they expelled it, and would not have it abide?

Villalobos.—What I said was this: They get rid of all that is verging on corruption; but some there is which gives them no annoy, and this remains awaiting its hour of putrescency, which is not come as yet; we may imagine it some three or four days hence, and then, at the end of that time, the veins being aroused and sensible of the shifting and uncongenial quality of the humour, forestalling its corruption, they do drive it forth, and then it finds its way, as I have said, to such parts as bring before

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our view the features of the tertian or otherwise of the quartan in their calenture.

Acevedo.—It remains yet to be explained why they hold to the order of the third and fourth day.

Villalobos.—As if all corruptible bodies were not subject to time and place in the order of their corruption. We know that beef in the larder, during the summer months, will keep eight days without taint, and no less of peacock and crane, but of partridge one dare not say so much, for we have known it to be spoilt in a day. And how if any one should ask why does beef keep eight days, and why is it more slow to taint than is the partridge? The answer to this is not difficult. The partridge is fine and delicate, and thus heat and humidity, which are causes of corruption, act more freely on such substance than on beef, the flesh of which is firm and gross. But now we have said the beef will keep eight days, suppose it were inquired, why not six? Why not twelve days? Is there more sense in that than if one asked why the sun takes twenty-four hours for its diurnal round? and why not rather twenty-six or thirty hours? Again, just so much fuel lasts through the night, or serves for a single watch; a taper lasts just so long, say six hours, and why not four, or ten, or two, or any number of hours? And if any one should ask why, with choler, corruption is more speedy than with melancholia? the answer comes easy enough. Melancholia is terrestrial and gross, while as to choler it is rather delicate, and so likewise melancholia is cold and dry; qualities opposed to putrescency, which we know, by heat and humidity is chiefly favoured. And if you ask why choler takes two days to putrefy, and why not rather three or four, there seems to me here no room

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for questioning, for nature has appointed to every corruptible thing its times and hour of corruption, together with its primary and other qualities, and we do not yet, I presume, inquire why so it is that fire doth burn and cold benumb.[1]

Acevedo.—And choler, as it would seem, doth bring about the tertian on the third day.

Villalobos.—Even so.

Acevedo.—There are no differences, I suppose, in choler, it is always of one sort?

Villalobos.—Many are the differences and diversities which in choler are found, for some is more pure than other, as also some is more igneous, or more than other subtle or gross; some there is with phlegm, and many variations are in it which there is no need to describe.

Acevedo.—But, however, as to putrefaction, one summons serves for all.

Villalobos.—With all these I have named, the putrefaction doth occur on the third day, or hard upon, some a little earlier, some a little later; the first we name anticipatory, in such the choler is more thin and furious; those which are tardier to come we call them the postponed, the choler in such being grosser and rather sluggard, but in short, neither one or the other do fail on the third day.

Acevedo.—Now your tertian and your quartan, suppose they last for years, let us say for three or four years' space, though a longer time might be named, how can there be in the veins a sufficient store of humour to supply and keep up the calentures all that length of time?

Villalobos.—Certainly it could not be, even if the veins

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were ox hides together sewn, they could not contain a sufficient supply, nor furnish it so constantly, unless some other part or parts did lend themselves to the business.

Acevedo.—And what other part can help to produce it?

Villalobos.—You know the body has certain rich streamlets that irrigate its territorial divisions, and nourish with substantial moisture this microcosm that we call man; and all these rivulets do spring from one head fount, which is the liver, and this is the fountain that doth supply it all.

Acevedo.—Such a fountain had need be bottomless to feed so many streams. Whence gets it all that fulness and excess that enables it to supply so many brooklets?

Villalobos.—Well, 'tis the mouth which maintains them in the first place by the taking in of food, as happens every day.[1]

Acevedo.—Explain me that.

Villalobos.—You know well that whatever is eaten goes through a process of cooking in the stomach, much as takes place in a pipkin; and the same with what we drink; and of this the stomach selects the choicest for its ration, as Galen doth express it, for he hath both sifted and proved the matter, although there may have been some light skirmishing and whizzing of darts on this subject, which shall not detain us here. And when the stomach has separated its portion, all surplus and remainder goes to the use of other parts, and to the service of the body.

Acevedo.—So the stomach is helped first.

Villalobos.—Yes, it lives by its work, as the ox that

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treadeth out the corn, and all that is not eaten sinks to the floor; the other organs near the stomach send to fetch their quota, if every one with his basket, to the understanding it were not more plain. The bowels make their account of the refuse and fæces of the victual, and these parts are maintained by a kind of sap or substance that travels along them; the liver hath some fine tubings that pierce the stomach and upper bowels, and these suck away like leeches at the sap and substance of the food, which lies, as we have said, at the fundus of the stomach, and higher part of the intestines, and this sap they carry to a narrow vein that lies in the hollow of the liver, whence it is distributed through all its venules, which are infinite, and here again, having been once more cooked, the sap is turned to blood, and in this concoction, as well as in all the concocted liquors, there are gross and fine portions, and others of a medium nature. In this decoction, which is performed on the liver, the grosser part is settlement or fæces, and this constitutes the melancholy humour, and the thinner part may be compared to the scum, and this is the choler; the part that is even and faultless in decoction is the pure blood, natural and choice for support of the members. There is yet another part of a nature mixed with blood, which is the phlegm, and this indeed is no other than blood imperfectly concocted. *The comparison is rather to must in the wine cask,* because in the process of concoction that wine undergoes there is one part loose and light, which surges to the top, then there is a grosser part, the dregs, which by force of weight subsides and sinks to the bottom; there is another part which is perfect wine, and yet another, that falls short of being perfect wine, and which continues must for some days, and the flavour of this we perceive in new wine.[1] In such

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sort we see that in the liver there are formed every day four natural humours. Now in such case as where the body is suffering from over-abundance of choler in the veins, it is clear there tends to form, day by day, a larger amount of choler than where this happens not to be the case, and this is how the tertian is kept alive; and so also where the tendency is rather to melancholy humour, there the melancholia will be produced in greater quantity and excess than in a body otherwise than so disposed, and this serves to maintain the quartan, in such wise than either of the two may be kept alive, and may be continued on for years.[1]

Acevedo.—Now indeed I get light, you clear away the straws from my eyes. Books there are that treat of these matters, and to be had in plenty, nay, full of the subject; from such I never got satisfaction yet. To me you seem not as one who speaks by guesswork and conjecture, but you hold the stuff up to the light, and show us the very web of it.

Villalobos.—Seems it so to you?

Acevedo.—So much so I wager all will say like me.

Villalobos.—Well, this much I can inform you of: I saw a bit of writing but the other day by a doctor who is no stranger to us all, affirming that what I have already told you here was perfectly well known to himself and others all along, and that he should much admire to see something new from my hand, and then came another by, and put to him some question with a point involved, that might admit of a little doubt, and on no head could he answer right, or make any way at all; in such sort that he showed himself quite unknowing on the subject, and also ignorant in respect of anything he might have seen

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of mine. Full well I know how vain it is to hope that in matters of science we should write of things that have been mentioned never, and the same would apply to every one who writes or has written from Hippocras' time until now. But much of good doctrine consists in being able fairly to expound a matter, and in adding to it some trifle or so that has escaped another man's attention, we may fairly deserve some praise. But as it seems to me, the doctors more than all that live have this scabies of giving no merit to their brethren, and all one knows and finds that have they by heart, quoth'a, and at their fingers' end, and yet they know nothing of it all the time. Sure enough this habit they got not from Socrates, his teaching, who, when some one had praised him for his knowledge, did exclaim, "One thing do I know full well, that what I know is nothing." How far from modesty like this are our young batchelors, of churlish, acrid sort, and also some low mongrels in the doctorate, who ever gnaw and snarl at the heels of him who shows inclination or capacity for knowledge.

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THE DIALOGUE

ON

NATURAL HEAT.[1]

THIS metre and gloss, our author says, should in its proper order, as dealing with natural or physiological subjects, precede the other, but that there is much in the former that assists the understanding of this one.

METRE II.

How can the milder natural heat,
Far more than elemental fire,[2]
Though this doth glow and flame much higher,
Prepare and cook all food we eat?
Suppose we boil upon a forge
Both bread and meat for three days' space,
It falls short of it in that case,
However much the flame we urge.

Acevedo loquitur.—Concerning natural heat which is common to all animals, have I listened to many a discussion among my fellows in the schools of medicine, and often do they make mention of the same, yet never could I learn if it were body, soul, or complexion, nor know I if it occupies the whole of the animal, or if it hâs its principium or birth in any special part or parts, and they

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lay to its account all that is done within the frame; me it strikes not yet in what wise 'tis so, for sometimes they will have it to be a sculptor or a limner of faces to the life; it comes and goes, grows and dwindles, they give more uses and offices than there be of days in the year, but never man set eyes upon it yet. Is it then a phantasy this animal heat, a sort of Robin Goodfellow or Will-o'-the-Wisp, a bogie[1] or a scapegoat for the faculty?

Villalobos.—In a question that has laid pretty long under the flail, you have started so many difficulties and false shews, that it would seem you would a'most have us to understand there is no foundation for what is said concerning natural heat, a mere bubble of physicians and philosophers. And since to mere snatches of inquiry my answering could never serve, either for my satisfaction or your own in removing your so many scruples, I should desire, here as we stand, to set the thing plainly before you in a clear and intelligent manner. First, I would call the senses into court, and when once you knew the thing palpably, I should be able, I think, to resolve your questions one by one, till your difficulties were far less than now they appear to be. Any way, you shall be satisfied, or my deficiencies be shown.

Acevedo.—As for me, fain would I see my hand into this darkness, for indeed I do lose my way. Would that some kind Christian would take me by the hand.

Villalobos.—Give it here that hand. Thrust it into your bosom now.

Acevedo.—Forthwith I obey you, sir.

Villalobos.—Tell me, what is it that you feel?

Acevedo.—I feel warmth, truly.

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Villalobos.—Then I would have you know and confess that this you feel is animal heat, which indeed all animals enjoy so long as life doth last; and when there is such cold in the air that a big bonfire would not burn, or even if you stood in a plain with snow for miles around, there, there is natural heat; thrust your hand in your bosom and you shall find it so there. And if journeying among men at night by snowy mountain paths, to save your life from cold you kill the beast that goes under you, and into his warm belly ripped you thrust both feet, as one has heard the tale, your life may thus be saved.[1] This while they live all living have, and when they die they all turn cold.

Acevedo.—Then of necessity it is the soul (*alma*)[2] that supplies us with natural heat?

Villalobos.—No less.

Acevedo.—This is what I could never understand. For how is it possible that a thing should furnish us with heat which hath not heat in itself? The soul is not any corporeal thing, nor is it subject to those qualities which bodies have. How then can it impart warmth by its presence, and maintain heat in the frame?[3]

Villalobos.—Some things there are communicating warmth, and yet not hot in themselves.

Acevedo.—What things, I pray you? tell me that.

Villalobos.—The sun, the moon, and all the stars,[4] which are not warm in themselves, as being no way affected by the contagion of elemental qualities, and yet do they engender heat in all that lies below; and also *movement in its own nature is nothing warm,* but a cause of

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heat that it is, by voice of all philosophers, for they say no movement can occur without the production of heat.[1]

Acevedo.—*I confess to that in corporeal things*, but the soul (*alma*) you see is not a heavenly body to scatter down heat on all that's underneath, nor has it movement, that I am aware of, for in itself it is immoveable. Tell us, then, of the soul, how does it become a cause of heat in the frame?

Villalobos.—Through movement, it is movement causes heat. The soul, it is true, does not move of itself, and yet by its presence it occasions movement in the body.[2]

Acevedo.—What shall we say, then, when the body is at rest? Is there then no heat laid up in it?

Villalobos.—Never once, while any life remains, does the body cease to move, either in itself or in some of its members and parts, and so far as the body, we may say that it is never wholly at rest.

Acevedo.—What parts are these in the body that are so constantly engaged in movement?

Villalobos.—The heart, the lungs, and chest, with all its tissues, and the belly, and all the pulsating veins, as well as those fine webs with which the last are interlaced.

Acevedo.—Is there nothing, then, in the body but what takes part in this movement? and how is the heat of such parts provided for? I pray you tell me that.

Villalobos.—Do you wind round me in this fashion to worm all out of me, and have it as your own?

Acevedo.—In sooth, good sir, 'tis the game I aim at. And let it not anger you now.

Villalobos.—Well, you must know that the heart in its

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construction hath a double sinus or cavity, of which the one on the right side is charged with blood extraordinarily choice,[1] such as might be fitted for the entertainment and support of so noble a substance, and in the left chamber is contained a subtle body, after the manner of air. Invisible, celestial, and most pure this body is, wherein the highest aim of nature is proved to give it perfectness; for its sake was made the heart as its proper recipient, and all the other parts are for it, and to obey it; for it is the *chiefest subject of the soul*, and from it is communicated life, and all the virtues to the body in every part thereof. This is the Platonic philosophy, and the Peripatetics contest it not.

Acevedo.—How can you ascertain that the left sinus of the heart is filled with such a spirit, since no man, I believe, ever saw it? How do you know 'tis so?

Villalobos.—The thing is palpable: we know it by the touch.

Acevedo.—How by the touch?

Villalobos.—Through the pulses. We cannot but be sensible that they hold within a subtle body, which makes them beat, and they never wholly cease from this till life is extinguished in the animal.

Acevedo.—How can you tell that the left sinus of the heart is full of this spirit?[2]

Villalobos.—Because after death it is found empty, and nature we know has made nothing fruitlessly. As if so principal a member as the heart should show an empty cupboard, and not rather conceal some great treasure, some exquisite substance to serve as principal residence for the soul, which could not otherwise remain. What

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warrants it the more is that we know the pulsating veins to be derived from thence, and in these we palpably do find the spirit goes, for in the pulses we have felt it bounding as aforesaid.

Acevedo.—In such sort that step by step you would have me to believe that from the heart proceeds the life, and also natural heat, and that from thence it is distributed to the body in every part thereof.[1]

Villalobos.—Nothing short of it, as you have heard.

Acevedo.—A new light in philosophy, truly; all the scholars who have sucked in their principia do talk of it. This is of the very elements of medicine.

Villalobos.—I have brought you by the way and by the track which the great natural philosophers had skill to find, and which they were proud to tread in, and I have caused you to lay your hand on natural heat, and no less on vital spirit, in the comprehension of which you professed to find innumerable ambiguities and darknesses; and now it seems that you find it all correct and unassailable, all the scholars know as much, and the babes all suck it in. Thus it is ever with the ill informed; before they have learnt to know a thing it is nought, and when it is explained to them, oh! then they knew it all along.

Acevedo.—What you say is but true. This time I confess the fault is gross. Far from thanking you as I ought, because you showed me what I was most in doubt of, I am here like the peasant that goes blubbering for his mule, and the man that shows it him he threatens with the stocks.

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Villalobos.—Enough. As yet I have not declared the principal point, for fear you should cross me with some light questioning, much as indeed has occurred. You have inquired of me whence proceeds the natural heat such as pervades all the members during life. My answer is, that it reaches them from the heart, and I say further, that it flows through the channel of the pulsating veins, which come off, as I said before, direct from the heart, and they pass dividedly to every member of the body, having within that vital spirit that is so very warm in itself, with which they warm all the members and all the ends and corners of the body, and this they do with a suave and uniform heat, by help of which the nutritive faculty undertakes the digestive acts, and it is named natural heat as being natural to the animal, and not produced by any artificial means.

Acevedo.—You bring me forward to the light. True it is we hear these questions in the schools, but what with prejudice, and what with defect of intelligence, only words do rumble in our ears, and the understanding has no savour from them any more than have clowns from their food, down it goes, and leaves nor delight nor thankfulness. I now would be told how the heart and spirit come by the heat they have, sufficient not only to maintain the amount of warmth which is there, but also with its superfluity and excess to spread the same through flesh and bones, reaching to every part, and to all ends of the body which keep open doors to its approach. For suppose in such place a fire burning,[1] 'twould surely consume the material that feeds it, and scar and ruin the spot where it blazed. Shall we say this heat is of the soul (*anima*)? that is a thing which I cannot understand; seeing, as I said before, the soul is

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neither fire nor flame, nor as to its qualities are they corporeal. But then again, I cannot but see that when the soul (*alma*) goes out of one, the heat doth soon subside; the body all turns cold, and so remains as clay. Wherefore in so considerable a difficulty, there resides, according to my idea, some grand secret of philosophy.

Villalobos.—In what other shots you have made you have circled about the white, but this time you have driven, my friend, your shaft straight into the bull's eye. Hence I am the more engaged to tell you all I know. Learn, then, that the principal cause of this heat is the soul (*anima*), which does everything in the body through instruments it brings in, to be employed in what are called the secondary acts;[1] because primarily it gives existence to the body, which only by the soul doth become and continues what it is; but over and above this, the soul is cause of operations, all such as are done in the body, and this is secondary act. The instrument which nature employs to engender that heat which resides in the heart and spirit is no other than the incessant movement of the heart and pulses therefrom proceeding; because all movement, as we said before, is cause of *actual* heat, and that not alone in animals, but also with inanimate things. Just as from blows upon stone there spring forth sparks of fire, and with wood the same, and when a noble vessel sails in full career sparks are seen to strike about the prow out of the bosom of that very element that is able to extinguish flame. With animals the thing is more noticeable still, as is seen in the greyhound, at the end of its coursing it so steams with heat as pond nor river could allay it. In man the same is observed when he hurries his pace or mounts a hill. And the heart and pulses being always in move-

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ment the spirit cannot but heat from being contained within them, and none the less from this spirit being a body fine and delicate, of a nature such as might be expected to heat promptly, and the rather from its being pent up in a narrow room, and so it does heat in fact, in such sort that if by the instrumentality of the respirations and also by the movement itself there were not taken in cold air to temper its excess, in a short time it must blaze and burn right out. This would indeed be nothing short of suffocation, because in such a case the spirit aforesaid would be converted into fire, and in this way the animal would spend its last breath.[1] So you see the air we take in by the breathing enters the lung, and this puffs away at the heart like a bellows. And then in its act of closing, the heart squeezes and drives forward the air it has received, which by that time has become heated enough, and then once more it loosens out to take in some fresh and cooling air. All this is done with such frequency and rapidity as is accommodated to the coming and going of the breath. Such is the behaviour of the heart and its dependencies every day of its life without strain or weariness because it is a natural movement like that of the heavens which in like manner is done without fatigue.

Acevedo.—I imagined the pulsation of the heart and that of the other organs of the breath, which we name spiritual, only served for two offices—one being the taking in of the air for its refrigeration, the other office being concerned in the expulsion of the same after it has become warmed, as is found written in all medicine; for when the heart relaxes and dilates, it takes in cold air, this being hurried to fill up that vacuum which may not

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exist in nature, and then once more it shuts and drives from out of it the heated air as in your comparison of the bellows. But that such movement was the immediate cause of natural heat as observed by us in animals, 'tis a thing I never dreamt of. It is not taught in the schools nor have I seen it anywhere written.

Villalobos.—Aye, child of mine, neither is it mentioned by *Jacobo di Forlivio*, nor any of the nominalists, and what made you think, pray, that the spirit which has its dwelling in the heart possesses so much actual heat[1] that it should be necessary to temper it continually with exterior air, and the more since Galen never writ it down as hot of complexion and it is even called a temperate vapour.

Acevedo.—My impression was that the spirit of its own nature is so hot, that it hath need to be moderated by the breath. I know Avicenna says of it that it is the hottest thing there is in all the whole body of man.

Villalobos.—What Avicenna meant to say is, that it is more hot than any as to the actual quality, and so it really is, for it bestows heat on all the members; but as to the complexional quality he would say far different.[2]

Acevedo.—He is there speaking of the complexional qualities of all the members.

Villalobos.—That is true, but he only writes as physician according to the judgment of the senses and not according to the naturality of things. For had he spoken as philosopher he would have expressed himself far otherwise. But in whatever way I look at it, even if the spirit in its natural complexion is so very hot, what necessity is there for the same to be cooled?

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Acevedo.—Lest it should be set on fire and consume itself with so much heat.

Villalobos.—If such were natural to the spirit rather than be so resolved it will be preserved by the heat as we find is the case with vipers and other very warm animals, the same are preserved by heat, even those of the fourth degree. But why do we search for examples when we find that fire doth consume and break down all that is before it, but not its own flame; this it ruins not, it rather maintains itself, persisting in its form and circle, which are also qualities it has; so that if the spirit finds a necessity to cool or temper any heat, this would scarcely be heat of its own, such heat as is native to it, but rather such as is renewed therein, as being the subject of that heat, which has to be imparted thence to every part of the body, just as the sun imparts both light and heat to every quarter of the universe. And, indeed, if you consider the thing well, there is no other part in the human frame to which nature could commit the task of spreading this heat through the frame, being at the same time the subject of it but only this vital spirit, because by reason of its delicacy it is fitted to receive heat rapidly, and by its lightness to convey it swiftly wherever it may be required, experiencing neither labour nor fatigue, because as one might say, it is appointed to it to visit all parts of the body and to give them all that life which but for it would fail them, and further to convey to them the natural heat without which they could never be warm nor execute what nature requires of them as already has been said. And if you can suggest any other immediate cause of natural heat which shall square with fact so well as doth this same with the incessant movement of the chiefest

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organs of the body, down goes my lance at once and I will surrender myself to your superior opinion.

Acevedo.—This indeed is something new: fruit not to be gathered on every wall. It would be well to add this, methinks, to the problems you say you are subjecting to the press, for there is much of value in it, and it will be esteemed accordingly, however that it might lose something of dignity by being delivered in the vulgar tongue.

Villalobos.—I have written all this in a book entitled '*de potentia vitali*,' and set it forth in the Latin language, but your Spanish printer cares not for books in Latin. The author must lay down the cost out of his own pocket beforehand, and I being no craftsman or vendor of books, think it a little too bad that I should be mulcted in toil, and perish in my substance too, and why? only that those may be served who see but little value in my labourings; nay, there will always be of the children of rapacity carping at it, and snarling at the heels of him they rob.

Acevedo.—I go bail for a bookseller that shall not be a year in selling every copy that comes from the press in regard to the subject in hand. But tell me now, what could be nature's intent in giving to the spirit so considerable a heat that it should need this unceasing and vigilant refreshment? For both sleeping and waking we see the fresh air never cease to visit us by the breath, and to pass through the pulses to the frame, for the sake of refrigeration.

Villalobos.—Nature might have better answered your expectation, perhaps, if the heat which the spirit yields was only meant for its use,[1] but it was necessary besides that there should be enough to furnish the whole body

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with heat, and so noble and delicate a substance as this spirit, could never bear the strain nor the effect of the heat provided for all, if not opportunely restored by such process of cooling.

Acevedo.—What so great need of all this heat in every part of the body?

Villalobos.—An answer to this will not employ us long, for no argument has been more thrashed out than this; there is no physician or philosopher who does not know that natural heat was meant for the concoction of food, which in the first instance is done in the stomach and belly, and then in the liver, veins, and heart; after which each member accomplishes its own particular concoction out of that share or ration that comes to it; which process is ever conformable to the natural appetite and gust of such parts, varying as they do vary in kind. And if it were not for this heat all the blood would set in the body and coagulate; it could never run through the large veins, much less through those of smallest size, which ramify everywhere through all divisions of the limbs and organs, and never are they allowed to be dry, but incessantly drop and distil sap and green diet,[1] and the heat is as truly kept up in them as we see maintained the flame of the candle by fat that clings to the wick. And in fine this heat was made for thousand other uses which we have no time nor need to describe.

Acevedo.—I confess myself more than satisfied in the discourse we have had, for already I seem to know about natural heat and its causes, the oven where it is made hot, and the pipes along which it sallies to all interior and exterior parts, and also I see the purposes for which it was contrived, and all made so plain and clear, I seem to

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have known it with my eyes, and to have touched it with my hands. But one thing puzzles me yet, long since 'tis on my mind.

Villalobos.—What is that?

Acevedo.—It is said that through the organs of the breath and through the pulsating veins there enters into the heart fresh air, with which there is attempered the spirit that dwells therein, so that this may not choke nor be resolved by the so great heat which it contains, and this air enters by the mouth and nostrils into the lungs, and thence it gets to the heart.

Villalobos.—Pretty much so, in fact.

Acevedo.—And if the said air should fail to come, the spirit then chokes, burnt out of a sudden, and so the animal dies.

Villalobos.—What you say is true.

Acevedo.—Well then, explain me this. The babe yet in the womb hath its mouth and nostrils stopped, but were they opened a span wide, the place it lies in is so confined and hot, that if any man had his head in the like he would surely undergo suffocation. I would ask how the little wretch contrives to live and thrive for so many months and not be choked the while, if it be true, as you say, that fresh air is uncommonly necessary. We observe that after the babe has escaped from the womb, if the parent overlays it, or crams it in feeding with thick food, or if she is unhandy with the breast, or covers the mouth with the bedclothes without sufficient care, nay, if any way the mouth and nostrils are stopped, the little thing is like to choke. What reason can you give for its

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choking like that when it is out of the womb, and yet its life goes on very well in that so close and suffocating place?[1]

Villalobos.—'Tis well thought of by you, and not hackneyed either. As to this, some have looked on it as a miracle, and some lay it to qualities that are occult. If one might answer in that way concerning natural things, adieu philosophy! all inquiry might be stayed at once by saying that such and such was only one miracle more, that God willed it so, and the like, and then indeed the merest rustic might sit on the same bench with Aristoteles and Plato, and with more of truth, may be, on his side. My idea of it is simply this: while the babe is in the womb there is no need for its heart to engender so much heat that it would possibly choke, and resolve the vital spirit which is contained therein, whence that movement of dilatation and compression which takes place in the heart and other parts which pulsate, hath need to be little or none, so long, at least, as the babe is in the womb.

Acevedo.—Whence then proceeds the heat by which the nutritive power in the unborn babe accomplishes its digestion and other operations?

Villalobos.—It is derived from the mother, in whom the natural heat serves both for herself and child. The veins of mother and offspring are so interlaced and inwrought that her natural acts include those of the child, even as if it were a limb of hers: and just as the stomach of the child lies unemployed in function until it is born into the world, and takes in food by the mouth; in the like manner the heart is still and functionless until the mouth of the child, as I have said, begins to imbibe its food, and by the

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mouth and nostrils breath is also taken in, so as to set the heart a-going, and to engender that natural heat which is all the more necessary, since now the babe first misses the heat it had from the mother. And supposing that in the womb the heart of the offspring did need some degree of refreshment, this necessity is yet not so great but that the small amount of air may suffice which reaches it through the pulsating veins of the mother: the same have already been mentioned by us as intermarried and inwrought with those of her offspring.

Acevedo.—And when the babe is just born into the world, how does it know that it should take in fresh air, which in the womb it did so well without? and what first instructs it to breathe?

Villalobos.—It is lessoned by the same schoolmistress as teaches it to suck the breast, although during its stay in the womb the infant had no practice in this: it is nature which teaches it, the vital and nutritive faculties being the means which nature employs.

Acevedo.—But this movement of the heart and members of the spirit, what agent compels them? for to my sense and apprehension you cannot say the soul (*anima*) does it, since of itself the soul neither has such skill, nor concerns itself in this; and even while we sleep the movement is the same, nay, it occurs during apoplexy, and even when our attention is turned away from it, and it is generally removed from the direction of the will.

Villalobos.—All this is effected by the vital principle (*potencia*), the suggestion of which the physicians have borrowed, and not inconsiderately, from the philosophers.

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Acevedo.—How does such power then act?

Villalobos.—It does all so naturally and with such seeming subtlety, as if it knew what it was about, and what it had to do, by headwork. Already you are informed by what proceeds that the nutritive power (*potencia*) doth operate by four virtues which it hath.

First in order is the attractive virtue, by which nature acquires and imbibes a certain amount of sustenance. The second is the retentive, by which she fixes it, and which operates until it is dealt and done with. The third is the digestive, by which digestion is performed on the food. The fourth is the expulsive virtue, through which she voids and ejects all surplus or inconvenient thing.[1] All this is seen in the child at its birth, because by the attractive virtue the stomach draws in and gets the milk, and with the retentive detains it, not parting with the aliment until it has been subject to digestion; by the digestive virtue the digestive process is performed, and the stomach partakes of all that agrees with it, and lastly, by the expulsive virtue the stomach rids itself of whatever it may not consider useful.

Acevedo.—All this we have heard explained in the foregoing problem.

Villalobos.—You say true, but it is not amiss to return to it once again, that you may be better prepared for what I have next to say. Know, then, that just as the nutritive power of an animal, and also of a plant, naturally operates by these four virtues, without intention or consciousness, in such wise the vital power of animals operates with the two which are here in question quite naturally, with no kind of knowledge of what it does. Because just

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as in the members that are fed and nourished, there is the attractive virtue that obtains present material, and also the expulsive, which gets rid of all noisomeness and excess, so in the organs of the breath, there is the attractive virtue as to the cold air, and the expulsive as to the warm air, and neither of them knows what it does. And with these two virtues, the heart opens and makes a bag of itself, like the bellows, to take in cold air, and then it shuts and squeezes on purpose to emit and eject the heated air. And since we do not marvel at the natural movements in the organs of nutrition, which attract thither to them all they require, and reject and dismiss all they find no use for, why should we marvel at the natural movements which the heart exhibits when it draws in cold air to launch it forth subsequently and orderly as heated air; because all such movements, certainly not voluntary, otherwise than natural, were bestowed on animals in their kind, not otherwise than on the elements were bestowed such movements as they have, and such as they exhibit in the order of their generations.

Acevedo.—I must confess myself satisfied as to what has occupied us. But now I am curious to learn why the doctors call it celestial, this natural heat?[1]

Villalobos.—If I do not err, it may rightly be called celestial because it does not proceed from element, but is engendered in the heart by that unceasing movement which is never stilled until life departs: for there is no movement of corruptible bodies in all the whole range of nature that so nearly answers to the movement of heavenly bodies as does the movement of the heart and pulsating veins; because they move as the heavens without wearying or irksomeness, and the heart moves according

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to its parts, always without shifting its place, and so far differing from the heavens, and the pulses move with the movement of the *primum mobile*, which is the heart; and they are all entertained in this motion by something that is not *mobile* at all, and that is nature's self; and also the heart and the pulses contain within them a body, very resembling the celestial bodies, which indeed is the spirit, and this spirit receives the virtue and influence of heaven from the great conformity and similitude the heavens have with it, more, indeed, than what they have in relation to all other natural bodies whatever. For these reasons, and others which I care not here to give, the natural heat may well be termed celestial.

Acevedo.—One other difficulty I encounter here, and I care not to remain with it unsolved, since such fair reasons you have found to all, and here it is. Already it has been said that the cold air which these organs, by their dilatation imbibe, doth serve to keep cool the spirit which is their occupant, so that it may neither be choked nor consumed by over heat, and when this air is thoroughly warmed, the heart then voids it by compression: that is to say, the heart closes and squeezes out this air, all which as shown. Now here is my difficulty, I wish to know if this cold air, when it gets inside the heart, doth mix with the spirit to temper it or not?

Villalobos.—I know not why you inquire of this, but I say it mixes with it.

Acevedo.—In the heart's action, when it shuts, and the pulses the same, to expel and distribute the heated air, how then does it manage not to loose the spirit that is mingled with it, and sometimes let it escape and get away?

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Villalobos.—The spirit is prince and lord of the expulsive virtue, and of all the other virtues; it brings them and bestows them in all parts of the body, and it darts forth from itself that heated air to take in other more fresh; and it does not follow hence that it might escape with this air, for if such were to happen the animal would die directly, as we see in a man overcome by tidings of great joy; nor is the providence of nature so lax and ill contrived, that when an organ casts off and parts with any superfluity that is clinging to it, itself should go along with the same, or any portion of the organ be dragged therewith. You might as well ask if, when the brain voids rheum, any of the marrow of the brain is contained in the discharge.

Acevedo.—Yes. I see it now. I have now no scruple left in all the articles of this inquiry, unless there is something more that sticks in the wording of the problem.

Villalobos.—Well then, let us see. The letter of the problem stands thus: Since the natural heat is far less powerful than the heat of the fire, and altogether more temperate and suave, how then does the concoction which it effects bring so rapid a change in the substance of the food, transforming it into another substance as different from the first as bread doth differ from the organ into which it has to be transformed, or if you will from the refuse that lies in the bowels. Not only so, but this natural heat will accomplish twice or thrice during the day so considerable work of concoction as cannot be effected by the blaze of the fire in the course of many days: for if bread, or food, or any meat be cooked in a pot, the heat of the fire, however great, will never operate so great a change in the substances submitted to it as does the

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natural heat within the stomach, moderate though it be; for if you place your hand inside the stomach of an animal you feel but a moderate degree of warmth, pleasant rather than otherwise, but if you put it in a pot where meat is boiling on the fire, the water is sure to scald you painfully. On account of this difficulty certain philosophers of antiquity held to the opinion that natural heat does not cook the food in the stomach, and the reason that Asclepiades gave for this conclusion was found in the risings and vomitings, because, indifferently as regards the stage of digestion, the food is never cooked in the stomach without certain acid and misflavoured juices which occur not at any time, as experience teaches, from the kitchen fire. I perceive, myself, that Asclepiades, Erasistratus, and those of their school, might very well believe that the food was not cooked in the stomach with the stomach's own heat, but that it putrefied even as a dung heap frets with the heat that it has; because before any matter can be transformed into another substance, it must, perforce, corrupt and so lose the form it had to give opportunity for the reception of another form which overtakes it;[1] and since the food enters the stomach to accept the form of blood or member, it is full need that the victual should first corrupt and despoil itself of the form which it previously had; and if this was the idea of those philosophers, it would certainly not be so ridiculous as Galen makes it out to be. But we will answer in another way more conformable to the method of the peripatetics, since we also are of their band, and I say and affirm that in the stomach there is a perfect concoction in all that is best of the food, and conformable to its sustenance, and I further say that the same occurs in the liver and in all other parts; but in all that is bad of the food, and not accordant to the

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nature of the said parts and members, coction is not effected in such; this, indeed, they refuse it, and it is voided as a thing both distasteful and prejudicial; and this is how I account for the unpleasantness which certainly accompanies those risings and vomitings.

Acevedo.—It is well, and what answer shall we make to that difficulty of the problem which says, the natural heat being suave and moderate, how can it effect in so short a time so incredible a piece of work?

Villalobos.—The difficulty would indeed be great if the author of this concoction and digestion were simply natural heat, but the fact is by no means so.

Acevedo.—How then? what cooks this food that is taken into the stomach?

Villalobos.—The natural power we call the digestive, servant and handmaid of that other power which we agree to call the vegetative and nutritive. This it is that performs the concoction and digestion of the choicer and most adaptable parts of the food; and the natural heat is its instrument in this work, preparing the matter to receive that form which they would give it; and after the stomach is sufficiently nourished and rejoiced therewith, it parts with all the remainder, however good in itself, as a thing superfluous, misplaced, and troublesome, and then the liver sends for its ration out of it, and the intestines send no less for their share also.

Acevedo.—Where and how are they served with their ration?

Villalobos.—At the fundus of the stomach run certain small veins we call the meseraical.[1] These have their

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origin in the liver, and never do they anything but suck and draw from the stomach juice that is the quintessence of the food which is cooked there; and they carry it to the concavity of the liver, and here once again it is concocted, like must in a cask, and converted into blood, as we have said, and the liver is sustained by this blood, and then it travels through all the veins, and there is fed by it the high and low of the body everywhere; just as the highest leaves of a tree are fed by a humour concocted in the root, even though the tree should be as high as those of India, which Pliny says no flight of arrow could overpass; yet the topmost leaf of such would be sustained and kept green by the sustenance that reaches it through the root; which indeed mounts regularly day by day, not forgetting as it proceeds, the tribute it should bring to the boughs and branches, which stretch out right and left and on every side in the whole breadth and length thereof. And so in our bodies all members high and low thrive and look fair through this blood which quits the liver and threads the veins all abroad. We must except from this description the stomach, intestines, the gall and spleen, and also the bladder, these, according to Galen, being provided for in another manner; for the stomach lives by its work, and the intestines the same, as we said in another place, without deriving anything from the veins,[1] and the gall sustains itself from the contents of its purse, as no way slack in asking for its own, and it sucks it in as a thing very sweet and delectable, and not otherwise, the spleen is fed with the seconds that are made up of the sedimentary part of the blood, and just the same does the bladder with the urine. This I am loth to omit, as I would have the doctors know that in opposing this view they go clean against Galen, as not understanding him

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aright, and this from no want of distinctness on his part truly, but through errors in the earlier translations. And since that which Galen says is very truth, I would have you, please, not fail to tell it to the face of certain wiseacres who are pledged to the contrary notion, and when you have once told them that the belly is not fed and sustained by the blood that goes to the liver, oh! then I warrant you, as a very heretic and fool you will be assailed, with bustle and tantrums they will deliver you over to destruction, or at least half slay you with their noise and clatter. They do not care, not they, to look into Galen, in the third *de potentiis naturalibus*, or any other part, so rooted and fixed to the opinion aforesaid, that should an angel descend from heaven they would say liar to that angel, and cast foulness on his embassy. And much more so if the subject of prejudice chance to be vain and enamoured of his talent, and finding confidence in it; for with pride there will be melancholy, oh dear yes! or furious airs, laughing and crying with many a wild antic and incomparable gesticulations. If chance carries you near such, take to flight, I pray you, as fast as your heels can, for mad dogs are no worse, unless you count for next to nothing all the worry and disablement.

Acevedo.—The counsel is good and the peril truly great with such as are set fast in an opinion and stiffened into a sect, without looking beyond it in the search for truth. But not to leave any stone unturned, we have yet, methinks, to learn how daily digestion is done on the food by the natural heat of the stomach, since in those risings to the mouth and vomitings we are no ways sensible of heat, and in cookery, if worth anything, there could never be such bad smell and sour taste, for such

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would hardly occur in what is done over the kitchen fire.

Villalobos.—The concoction which takes place in the stomach is not altogether similar to what we see done in the pot. In the latter there is neither attractive virtue, nor expulsive, nor any other action, but solely that of the fire; for all that is done there is cooked without everlasting niceness of choice and rejection; and thus we find no opportunity of corruption in what is done in the pot, on the contrary, it is preserved from corruption. But in the stomach it is not so: there what is accomplished is done through the nutritive power, separating what the stomach likes by the attractive virtue, and expelling what it accepts not by the expulsive virtue, and out of that which the stomach elects there is neither smell nor evil savour, but in that which it refuses, yes.

Acevedo.—If that which the stomach would get rid of is so bad, why do the liver, brain, and heart afterwards support themselves by it? surely these are organs more noble than the stomach.

Villalobos.—I count not as bad that which is driven from the stomach, for much of it is good, but not suitable for its purpose, and as such the stomach passes it on, because it will not serve its present turn; but the liver, and other principal organs may find their account in it, they take of that good which is most suited to their natural purposes, and act on it by such stewings and decoctions are agreeable to their several natures, and thus they are sustained. The stomach and the bowels have no need of these refinements of cookery, because they lie outside, in the suburbs one might say; they care not for the delica-

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cies and elegancies of refined life such as takes place inside the town, by which town I would signify those members which are supported by the liver and veins; for these desire other materials in the food from what is prepared in the stomach. And this is the opinion of Galen, whatever may say the Conciliador and other light skirmishers of the schools, whose darts we hear daily whizzing in our ears.

Acevedo.—And yet there sticks but one small scruple more in this inquiry. I see not altogether how the digestive virtue performs so great a change by concoction with so low a heat as is the natural heat.

Villalobos.—And yet we might well be far more amazed at the digestion which occurs in the root of plants, which have no natural heat made evident to our perception, and these do cook the food for all the whole of the tree, though it be ever so high, as we have mentioned.

Acevedo.—Is that all you have to say in answer?

Villalobos.—I answer that when a natural agent is strong, and gets the victory over matter, it introduces easily what form it would.[1] And thus the digestive virtue is very strong, and gets the upper hand of the food; for this is the distinction which Galen makes between poison and food: that as poison overthrows nature, so nature subjugates the food. In such wise that the food submitting itself as conquered, and not fighting against the digestive power, only a small amount of heat is required for its concoctions. But what occurs in the kitchen fire is far otherwise, because the boiling water is not a pure natural agent, nor has it for its aim to introduce another form, and it does not get full mastery over the material in

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the pot; quite otherwise, this ever resists and sets itself strongly against the operation of that artificial heat: and thus, although the heat may be great, it can never be paralleled with the natural operation of the digestive virtue that employs only its mild suave heat; and if you would further prove how the concoction of the digestive process is not done by power of heat, you may learn it from fevers, for in these the heat of the stomach and other members is surpassing, and at the same time the digestion much enfeebled, so as sometimes to be quite deficient, while at others all turns corrupt. So that the natural heat ought to be in natural amount and degree for nature to operate by its means, and if it misses that measure and proportion, it is no longer natural, but extraordinary and out of course, and so to employ it nature scorns.

Acevedo.—All this is very well declared. I have nothing more to inquire.

END OF THE DIALOGUE.

We add the following extract from the third problem of Villalobos as proving his competency to grasp the idea of the general circulation, as shown in Stanza XLVIII of the poem on the bubas, and notes on the same. Nor is it surprising to find him well acquainted with the common hydraulic principle of water rising against gravity. *Leonardo da Vinci*, the great master in hydraulic science, was some years his senior in the same generation of men; and the floodgates, wheels and pumps introduced by the Arabs into Spain must have created on the part of our poet a familiarity and practical acquaintance with common hydraulic phenomena. Fountains even of

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quicksilver, it is said, enlivened by their radiant spray the halls of the Arabian magnates. The problem of the circulation of the blood rested so entirely on hydraulic or hydrostatic principles that the circumstance of Harvey's discovery has been mentioned as a principal reason for the almost exclusive cultivation of the science of mathematics in this country for a period of years, during which it eclipsed all other sciences, and retarded to a marked extent the natural progress of chemistry. Sure it is that medicine was for long occupied with purely mechanical theories, of which geometry was the basis, and explanations derived from chemistry were almost wholly excluded; the truth or falsehood of Harvey's assertions depended indeed on hydraulic or hydrostatic principles of a very extended application. It remained for Descartes, in a subsequent generation, to give the rationale of water rising against gravity, viz., that the weight of the water counterbalanced that of the air, and Castelli and others systematised and improved hydrostatics to that extent that the science might be called new cast, compared to what it was in the days of our poet. We may conjecture, however, that the suction principle or pump action of the heart was fairly apprehended by him, especially as it is not the only instance of the circular motion of the blood being mentioned incidentally by authors of this period; nor is this very surprising, for Aristotle, considering that the blood flowed from the heart to the extremities, regarded its return as highly probable. Any way, it will be confessed that the passage quoted from the poem is an interesting feature in medical literature. The continuation of the extract refers to the conversion of heat into force, a subject which equally interests us. The following is the text of Villalobos in the third problem:

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"Know then, that in nature there are two things more necessary than any other soever: one, that there should be no vacuum anywhere, the other, that a body should be no bigger than that which doth contain it. These two necessities are equal, and silence all the rest. Thus there is necessity that water shall fall instead of going up, because being a heavy body, it naturally tends downwards; but let a necessity for a vacuum supervene, and you will see the water mount upwards without its being lifted anyway, for it then has to follow the greater and more universal necessity, and this is why in syphons and other contrivances we find the water travel upwards.

Item.—It is necessary that a fire should communicate heat to whatever lies in its neighbourhood, but if it should happen that as such things get hot they can no way be held in the place where they are, the fire then fails to heat them, and they will make for themselves room wherein they may be contained. So also when air is warm it occupies more space than when it is cool, and water just the same, as may be proved to sight. If you take an empty phial which has been exposed to heat, and put it with its mouth downward in a dish of water, you will then perceive that as the phial cools, and the air that is within gets cold, the water out of the dish will go on rising in the mouth of the phial, mounting upwards to fill the space that is left vacant by the air that is within; which air when it is cold occupies somewhat less room than it did when heated; and in cupping glasses 'tis the same when we see the flesh rise within them."

And then he goes on to consider the explosion of gunpowder in artillery.

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APPENDIX.

In preparing notes for the poem on the bubas, I was led to consult the work of *Fray Luis de Leon* on two difficult points, viz., the meaning of the words *secas* and *comen*. This celebrated linguist, poet, and theologian belonged to the latter part of the sixteenth century. He was a man of sublime capacity, of great erudition, of equal piety and industry. His works are contained in the collection of Aribau. The exposition of the book of Job by this author lies far beyond my literary grasp; there are points in it, however, which are full of interest to the physician, and I see not where they could so well find a place as in some such work as the present. I may be permitted here to express the obligations we have to the solid criticisms of living theologians in the treatment of subjects that concern both the faculties, as is evidently the case with leprosy. While medical writers, chiefly of the continent, have seen nothing in the Jewish law but sanitary regulation, anticipations of social science, and police construction, our theologians, better inspired, have turned the picture on the other side, and they have shown how the lawgiver availed himself of ineradicable errors in an early civilisation to impress on the chosen people of God the difficult lesson of human impurity, and of the necessity of vicarious substitution in another order of perfectness, ere man can ever stand justified before his Maker. Some among us, indeed, have become so wedded to their crude interpretations of Scripture, as wholly to negative all the results of observation, and to thrust it out of court. So leprosy is now commonly regarded as a contagious disease, and yet some good books have been

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written to show that, in the exercise of their function, the Jewish priests did not so regard it, but gave to their rites a far more spiritual interpretation, while human experience confirms the fact that leprosy is not contagious. It is true that at this hour, in the East, the complaint is regarded with reproach. One has to burrow very deep to trace the foundation of such errors. In describing the Persian nation, Herodotus has given as a trait of this people, that they believed the *leuce* or leprosy was occasioned by some default committed in the worship of the sun; if a stranger was the subject of it, they drove him out of their territory, and even white pigeons were abhorred from a prejudice that was near allied to this.

Turning our attention to another head of subject, to what frivolities have we not had to listen concerning the osteocopic pains that afflicted David and Job, as if in a language like the Hebrew bone-ache would not stand for the type of all pain, just as tooth-ache among ourselves stood long as the type of neuralgia. Bone-ache is truly excruciating torment, and well might pass for all the aches; every surgeon understands the necessity of relieving the tension that is exercised by unyielding tissue upon a part inflamed. To the purely literary man we might instance Charles of Sweden retiring from the field of Pultava; though least of a character to give way to pain, his head was fairly turned by the effects of a moderate wound, the phase of pain passing briefly into delirium. It is agreeable to such notions that, in challenging the words of the Almighty concerning his servant Job, the adversary should have said, "Let me touch him in his bone as well as in his flesh, and we soon shall hear another sort of blessing," as knowing well the nature of pain; and without pretending to divine what

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the malady of Job really was, we may at least be bold to affirm that this disease was not syphilis; its complexion lies far nearer to leprosy, especially in a point which has been recently expounded in the able report of the Norwegians Boeck and Daniellsen (*Traité de la Spédalsked*) upon this disease, viz. the vast amount of parasitic product which may accompany it, a fact we have not seen realised in the very worst cases of rupia from syphilis. There are other features of resemblance which are worthy of remark in the account of tubercular leprosy as given by these authors, such as where they say (p. 198) "the glands of the neck, axilla, and groin, are swelled considerably," and where they mention the deep and lancinating pains which the patient commonly experiences, especially in the leg, during the night time, the fever which is apt to accompany it lasting in the acute cases for a fortnight or so, the nausea and dyspnœa, implication of the soft palate and strangulation of the throat, as well as in the liability there is found in this disease to be cut short and cured by an intercurrent disorder, and especially by internal inflammations. So that indeed the comparison seems not inexcusable, though it is safer not to dogmatise on the subject. I would here set down, with no affectation of learning, two passages from the gloss of *Fray Luis de Leon*, and firstly on chapter ii, verse 7, of the Book of Job, where mention is made of the devil's act in plaguing Job with sore boils or imposthumes (*postemas*), as his version has it, from the crown of the head to the sole of the foot. The friar here says, "Mind, that to do harm to mankind is ever the devil's game; he has got the licence, and to work he goes. We may well judge that Job's complaint was a grievous thing to bear, for the author of the same was the devil; truly the worst he can

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perform is to him but daily food (*es amigo de hacer el peor*), and here he would spare no pains, as much from the annoy and envy that set him on the task as for the end he proposed himself, which was to beget impatience in Job, and so to prove that the virtue of the man was but show, as he had been bold to stand up for in the face of the Almighty. It is more than likely, then, that Job's disease was most terribly grievous; and though some have made it their business to inquire what kind of disease it was, it would seem to be scarce ascertainable. Should there be any way by which we might come to know it, this would lie with most probability through the written letter. The word that we have called *postemas* in Hebrew is *sechin*, the same as in Spanish *secas*, which, indeed, we have borrowed from the Hebrew, and we are confirmed in this by what is found in Isaiah, chap. xxxviii, ver. 21, and in the Second Book of Kings, chap. xx, ver. 7, where Hezekiah's sickness is in question; the same word being there found, and also from what is said, from the medicine employed, the occasion on which it is used, and other circumstances, we may conclude that *sechin* means kernels or glands, *secas* and *llandres* (which last is a word corrupted from glandes).

"For Hezekiah, we may remember, fell sick very soon after the mortality that fell on the Assyrian host, and Josephus (*lib. Antiq., cap.* 2) says that this mortality was from a complaint in the glands, *llandres*, from which in one night there died one hundred thousand persons. Thus, it seems likely that Hezekiah too, by reason of the corrupted air, became similarly affected, and vast alarm would be naturally felt as of a desperate and fatal complaint (see Isaiah, chap. xxxviii, ver. 1); hence, too, the remedy that was applied to it, being no other than a lump

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of figs, the very thing one would apply to a glandular swelling or apostema, *secas* in short, of which *secas* there be many kinds, and these of Job appear to have been of a painful and pestilential character, even more than is ordinarily met with, for he is described as afflicted with malign *postemas* or *secas*. And the devil, who was likely to be acquaint with every form and mode of disease that might afflict human kind, made this the one object of his choice as ensuring more of torment, hoping thereby to compass his end, which was no other than to betray Job into some act of impatience. And if you consider attentively the account that is given of the disease you will find that it comprises all that exists of pain and wretchedness in earthly affection, for some of these bad and envenomed *postemas* are sharp beyond belief, like nails driven into the flesh; either of themselves or from the ill humour they contain, they cause a burning fever, and when the wounds open they reek with a pernicious smell, spreading fœtor all around, and as some do ripen and rot there are others come out fresh and grow, just as is found in the written letter, for here we find both filth and fever and nauseousness and pain blended and cast in one, and as proper accidents with these occur a hundred ills, as want of sleep, and tossing, and what there is mentioned, beside a perfect abhorrence of food (see chap. vi, ver. 7), and the breath coming difficult and short, with a tight constriction in his throat, and as we see he calls to God if only he might swallow his spittle; all of which was so performed in the man, that without receiving his death blow he lay in continual torment, for death would have been less to bear (chap. vi, ver. 9), and of this he makes his complaint. Which sickness, fierce and painful as it was, had yet this misfortune added to it, that his poverty

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was also most extreme; so Job had no help of medicine, nor had he comfort of victual, nor cleanliness of chamber nor of clothes, nor fitting protection from the weather, nor solace such as suits for the sick, for his dwelling was in the dust, a sorry tile was all he had to ease his pain, and instead of sweet counsel of friends the perpetual girding of his wife, and these are the words she spake," etc.

The next of the two passages is relevant to chapter xxx, verse 17, of the Book of Job, and here an expression is found which corresponds to what is seen in Stanza XXXIX of the poem, viz. *they eat*. "My bones are pierced in me in the night season, and those that *eat* me do not sleep;" but in our version of Scripture it is more loosely rendered, "my sinews take no rest." Other translations say my veins take no rest, or do not lie down, or my veins gnaw me, etc. The gloss of *Fray Luis de Leon* is as follows:—"Both pains and thought afflict me, and continue through the night. Pains, he says, not one, but various; they lie not on the surface of his flesh, but keep on boring through his bones. Those that 'feed upon me' and 'do not lay them down to rest,' which would be the same pains ever gnawing and continually wasting his strength, for nothing breaks a man down like pain; or perhaps here there is rather intended the vermin in his flesh, which were bred out of all this rottenness, coming, as he says, incessantly without pause, and for ever eating and consuming him; the same are gnawing at him still, when all the world is laid to rest. Some, indeed, interpret 'my veins or pulses do not rest' as signifying the continual fever which was on him, and which is ever hottest in the night; but the pains or vermin suit better, for Job goes on to say, 'because of

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their multitudinousness my vesture is changed, they clasp me in like the collar of my coat.' The vesture here intended is the garment of his soul, that is to say, his flesh on which these vermin feed. From their coming not in one, but every part, and their number being countless, he says, they clasp me in; and also with some reason, what am I better than the dust? I am like the mire or dust and ashes. Exodus ix, 5, 8."

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NOTES

TO THE

DIALOGUE ON TERTIAN FEVER.

Page 229, Note 1.—The Spaniards have no common word for ague but *terciana*, unless they say intermitting or interpolated calenture. Calenture means fever heat or fever.

Note 2.—Villalobos warns us elsewhere that the metre is a poor thing; for instruction we must look to the gloss. The rage for glossing, as we have said, was extreme (see 'Don Quixote,' Jervis' translation, vol. iii, chap. viii). The dialogue at this period was a favourite literary form.

Page 230.—Toledo was sometime a Mahometan city, whence the Saracenic rule spread over the south of France. The reconquest of this city by Alphonso of Leon was the first great step in the recovery of Spain from the Moors. This happened so early as the year 1080. Hence the language of Toledo came to be considered the purest in Spain; not that all quarters of the city spoke an equally pure Castilian (see 'Don Quixote,' vol. iii, chap. ix), but Villalobos, who has scholarly pretensions, and also follows the court, insists that an eclectic language is preferable, and he brings forward some

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instances of Moorish adulteration that clings to the language of Toledo.

Page 231, Note 1.—Pores. These are the pores of Asclepiades, which are also named in the poem, Stanza XXXV. "In some such way," says our author, "the fluid escapes from the veins." It is not from open mouths of the vessels that such fluids are projected. So considerable a datum towards a knowledge of the general circulation as anastomosis of vessels was known in the age of Galen. The theory of pores and corpuscles, Epicurean in its foundation, has had more than one revival in medicine. Quite recently microscopists pretend to have seen such pores in the vessels, and to have watched the blood-corpuscles passing through them.

Note 2.—"This evil humour." This foreign thing or heterogeneous humour is delivered from station to station, till it finds some part where it can be held or contained, and which cannot resist it. This is the same class of theory we find in the poem on the bubas, Stanzas XXXIII and following (see also notes on the same, page 115), which theory we have already said to bear a strong resemblance to the modern views of Virchow on the pathology of syphilis, recurrence of tumours, and various morbid infiltrations.

Page 232, Note 1.—We all of us have witnessed these shiverings, which betoken some invasion or assault of the organism, some plague or burden that vexes it. They often serve for aid to diagnosis. One of the worst instances that now strikes my memory ushered in an attack of inflammation of the hip-joint in a hale but elderly adult, which afterwards proved fatal. Nothing is

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worthier of mention here than the rigors of very severe character which followed on injections of saline solutions into the veins of certain cholera patients in the London Hospital during the last epidemic, and which accord with what has been found to occur in animals under experiment, all which is set forth in medicine, and sufficiently explained in the immortal work of Torti on periodic and pernicious fevers, A.D. 1712. Villalobos is clearly much indebted to Galen for what he lays before us, but yet with shades of difference (see Galen, *de inæquali intemperie*, and also more especially lib. ii, cap. v, *de symptomaton causis*). The bile in ancient medicine was held to be the constituent or efficient cause of such shiverings, notwithstanding that it was so hot, for sparks of fire or hot wine when thrown suddenly on the skin are likely to produce rigors, and they also occur after burns (see *Galen*, *loc. citat.*). By one of our modern teachers they have been referred to the spinal cord, which agrees with the pathology of Hoffmann; by another they have been compared to an epileptic fit, an analogy which seems borrowed from Morton. The suffering from heat and cold at the same time, distinguished more particularly the fever *epialos* the *querquera* of the Latins, which has by some authorities been classed among the tertians.

Note 2.—What kind of faculty is this? Hippocrates says that nature acts not by contrivance or design. Aristotle, that it is not under the dominion of reason, yet behaves not irrationally, "it goes like an arrow to its mark." Our author declares that these operations are not directed by the reason, that is, by the rational *anima*, nor by the *anima sensitiva;* he refers them to the phenomena of vegetative existence presided over by the *anima*

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vegetativa, in which *anima vegetativa* there was recognised as much variety as in the species themselves.

Note 3.—These virtues, faculties, or potentiæ, are the same that Villalobos introduces with much ingenuity into the machinery of his poem, Stanza V. It just falls short of prosopopœia; he rather shows them as nature's instruments, which in that particular instance were stayed or enfeebled by the displeasure of God. They may be commended to the notice of the medical student. In the interpretation of medical writings I remember to have been subject to error from not understanding them better. They are, however, described by A. Paré with sufficient clearness.

Page 234, Note 1.—Every alteration of the humours is termed by Galen putrescence, which is only another name for fermentation or retrograde metamorphosis. Every fever is caused by degenerescence of the humours, according to this author, except ephemeral fever, in which the pneuma is alone concerned; indeed, there is only fermentation that can furnish an analogy for these phenomena which are allowably called zymotic. The comparison to a dung heap is coarse enough, but we find it made available at a far later date in medicine. In irritative fever, according to Galen, the arterial blood, as being the most *spirituous*, is first affected, and after it the blood which is in the veins. That the ancients believed nothing but air to be contained in the arteries is a false impression that we imbibe in the schools. Far from so, the spirit we read of is mentioned as a vapour from the blood. Benedetto Varchi, writing in the same year as our poet, says that many of his date were of opinion that arterial blood differed in nothing from venous

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except that the air which it contained was finer and more pure. Galen thought that by the process of respiration the *pneuma* was freed of its grosser and less vitalising particles. It seems curious how the entirety of the process was not grasped by ancients. I have sometimes thought they had been led astray by observation on too confined a scale, for cases where the *septum ventriculorum* is perforated do occur abnormally, or perhaps their false conclusion was formed from dissections on animals. Harvey insists that the main difficulty to the apprehension of the circulation of the blood resided in the persuasion that pulse and respiration served for the same purpose, *eundem usum esse pulsus quam respirationis*, the former being under the dominion of the vital, the latter of the animal spirit.

Page 235, Note 1.—This is no whim of our author, for long after it was so writ in medicine. That remarkable genius *Fernel* was, I believe, the first to impugn the doctrine that extravasation from the veins was an imaginary thing, or too slight in degree for an efficient cause; nor can we resist mentioning here the good service done by Luis Mercado, court physician of Philip II and Philip III of Spain, whose work on intermitting fever forms an epoch in the history of medicine. First, even before Morton, he distinguished the pernicious intermittents. Mercado denies that ague consists in extravasation and excessive corruption of the humours thrown upon the sensitive and fleshy exterior portions of the body. He shows that Galen is not consistent with himself, or at least not exclusive in his doctrine, for in his second book on the essential differences of fevers Galen affirms that ague may happen from the deposition or putrid degeneration of

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humour in any other organ besides the sensitive fleshy tissues, provided it happen external to the veins. Mercado also points out that when our humours are cast from their natural bed into the tissue, they become converted into pus, but we never have abscesses in ague, or anything of the kind. What really destroyed this doctrine of Galen was the clearer notion that was generally embraced as to the circulation of the blood. Willis, Morton, and others who were led by the idea of fermentation, experienced the influence of Galenic doctrine; accordingly these authors have not taken sufficient account of the reaction of the system. Consistently with the views of Galen, fever derived from an external fomes, such as marsh miasm, should have a continued type, the same as from putrid food, and, besides, the severity of the fit is in no proportion to the amount of shivering.

Page 236, Note 1.—"A taking doctrine," that is to say, the doctrine of the four humours, the scaffolding by help of which all modern physiology was raised, and which we have long since burnt as fire-wood, but enough of it remains by us to show what strong stuff it was. The traces of this doctrine remain in language, and show no symptoms of decline. For instance, the rare cases of pruritus that occur in syphilitic eruptions have been recently attributed to persons of dark and muddy complexion, in other words, of melancholy and phlegmatic temperament, agreeably to the doctrine of the four humours. There was, indeed, just enough of plausibility in it to ensure to this doctrine a ready acceptance and a long duration. The dismissal of the four humours from medical reasoning seems more due to the English writer Thomas Willis, A.D. 1676, than to any other individual,

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but at that time of day it was impossible to construct anything better.

Note 2.—So early as Luis Mercado we are informed that the action of the emunctories resolves the fever, but if any of the humour remains in the stomach, liver, or mesentery, the fit will be renewed, much more so if from languor or debility the humour is distributed to any of the organs, and they become the subject of lesion; we have then pernicious fever more or less dangerous, according to the quality of the humour.

Page 238, Note 1.—The doctrine of the quaternion rests on two pillars, hot and cold; their positive, undeniable, opposite character. So in the infancy of electrical science we have electricity positive and negative. In course of time, however, heat came to be considered the chief of the four qualities; it was suspected in the moist; it is, say the philosophers, *as if form* to the rest.

Page 239, Note 1.—"The mouth does it." The poison of the intermittents goes to the liver from what we eat and drink. There is no doubt that the *primæ viæ* are deeply interested in the phenomena of ague, and the duodenum to a very marked extent. The notorious fact of quinine being assisted in its action by Epsom salts has been explained by this circumstance. Then, again, the elimination of most poisons has a tendency to the *primæ viæ*. No one has expressed this in bolder terms than Morton, who attributes vomiting, diarrhœa, dysentery, and cholera morbus on a frightful scale to the pathogenic principle. Like Mercado, he attributes the interval to a sensible diminution of the poison through the emunctories. Yet how far are we from a solution of the problem raised by

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these periodic fevers. They may come from drinking foul water or from breathing a pernicious air, but other causes than these give rise to the phenomena of ague. The autocrasy of a particular cause has too often been substituted for the autocrasy of the organism, and the attention is led away from the symptoms developed in the patient, and from the variety exhibited in diseases which are found to be amenable to quinine.

It has been very properly said that in the human economy periodicity is the rule, while the reverse is the exception, and should also be the more surprising. How, then, has not periodic change been more the subject of our study? Scarcely now are we acquainted with the daily variations of the pulse, or of animal heat, and some have made them very erroneously to depend on the inception of food. *Senac*, A.D. 1769, in his celebrated work on fevers, pointed out this line of research as the only one that promised fair results, but we are really not much advanced. The attention which the ancients gave to crisis has even appeared to us excessive, and we have accused them of exaggeration in the length of interval they have bestowed on some periodic fevers; but modern observations made on intermitting hæmaturia and other affections have proved their observations were correct; and even in Elephantiasis Arabum there has been found a periodic law—no new stage of growth that is not preceded by shivering.

Page 240, Note 1.—This account is the more worthy of attention, since the description of the digestive acts, as given by authors of this period, shows several points of difference.

Page 241, Note 1.—Pretty, but scarcely true. Suppose

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some agent of a physico-chemical nature to have originated the ague, does this agent reside henceforth in the organism, perpetuating the complaint, or has it simply introduced a bad style of working some "error in the assimilative" which constitutes it? Had Villalobos confined himself to the statement that some of the organs, when they are below *par*, become centres and strongholds of the malady, from which it is continually reinforced, this had been well enough. According as the head, heart, lungs, or abdominal organs are engaged, we have the algid, syncopal, pneumonic, dysenteric forms; in pregnancy and during menstruation an excessive flux will happen in the fit. In arthritic subjects, according to *Mercado*, you have uncommon pains assailing the patient. In many cases specific treatment fails; it is only by operating on these centres that the ague is cured.

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NOTES

TO THE

DIALOGUE ON ANIMAL HEAT.

Page 243, Note 1.—Natural heat, called also animal, vital, inbred, congenital, native or ingenerate, names invented by the Latins to express the ἐμφυτον of the Greeks; it is also called implanted, intrinsic, and internal heat; natural, because it comes at our birth from paternal seed and menstruum of the mother, the former hot, the second cold, which are the instruments of our generation. Galen says it is ever consuming and preying on substantial humidity; the proper natural heat is moist, the heat of the fire is dry. Varchi tells us that natural heat is not fire, but that when radical moisture is wanting it may then turn to fire, as in fever and other accidents. Fire is excess of heat, and in heat there is unity, and no difference of species as some contend. Natural heat is also called *vinculum*, as binding together body and soul, and many are the opinions concerning it.

Note 2.—Of elemental fire, there are two sorts—that up above, the fire in the sphere, which is pure; and that down below, which serves our common uses, which is mixed and impure. That up above is thin and clear; it does not burn because of its great tenuity, for it is the

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thinnest body that exists, and it is also the lightest, earth being the heaviest known; the heat we have here below becomes apparent only through the gross matters which are mixed therewith, on which it preys and strikes; it is reverberated from them as light from solid bodies; and it is the same with cold, this also must be reflected from some body with which it mixes. Fire feeds not on itself, it has a great deal of form. 'Tis its form makes it quick; its matter retards it and makes it slow. Such were the once received ideas concerning fire.

Page 244, Note 1.—"A bogie," in the original *la hueste antigua*, the ancient host. So singular an expression must surely have originated in some historical facts. The result of my inquiries from persons of great bibliographical and antiquarian research amounts to this:—Formerly in parts of Spain, and especially in the Asturias, by the "ancient host" was intended a species of fantastic and aerial legion with wild and extravagant figures, which served to frighten children and subdue them into good manners and quiet; it seems not much unlike the spectre hunt in Germany. It is now all but forgotten, being superseded by the "*coco*" and "*bú*" of the modern Spanish nursery.

Page 245, Note 1.—This recalls the heroic remedy used for Marshal Lannes by the French surgeons in Spain to recover him from cold, fatigue, and bruises. They killed and skinned a sheep and wrapped him in the skin before the animal heat was gone from it.

Note 2.—Alma, the soul. The word is originally Provençal, and common to the Spanish, Italian, and Portuguese languages; it is also seen in the French word âme;

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it only differs from the Latin *anima* in conveying the generally accepted idea of the soul's immortality, the other being used in a more philosophic and restricted sense. According to the opinion of St. Jerome, generally received in the Catholic world, the rational soul is a superaddition—an insufflation from the Deity. The anima is rather the presiding genius or vital principle of any part or creature. The science of the soul or spirit was called *Zetoumene*, the desired, by Aristotle; the nobler part of subject fared badly in his hands, and left room for the interpretation of Averrhoes, which is vulgar oriental Pantheism; but if the Stagyrite has been unsuccessful in this highest branch of metaphysics, there is much that deserves admiration in his treatment of the anima as related to the vital functions. Leibnitz especially approves of that doctrine of his which makes the soul to be the source of all organic movement. He adopts the early *entelechia* of Aristotle under the name of primitive forces, which comprise, not only the act and the complement of the possible, but also an original activity. Now that once more attention is turned to the forces that rule in nature, it is probable that the doctrine of Aristotle may suffer rehabilitation. The *entelechia* was an expression to which the ancient philosophers were reduced from the conscience they had of the imperfection and transitoriness of matter. It was a subject of ridicule from the pen of Rabelais, as well as the *anima*; he describes the former as the Land of Quintessence. There was indeed, at one time, something too much said and written on these subjects. In one of his treatises this physician satirist employed the word âne instead of âme, and the joke was none the worse, perhaps because of the first syllable in anima. The sarcasm was especially directed against the Sorbonnistes, whom

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he was ever wont to taunt with ânerie. For this Rabelais most narrowly escaped burning at the stake at the hands of the rabid theologians, and was only saved by special grace of the king and by laying the fault on the printer.

Note 3.—Descartes was of opinion that the operation of the soul could turn the course or current of the circulation as a rider guides the horse by the rein. Leibnitz has the merit of pronouncing that not only the same quantity of force in bodies is maintained, but also the direction in which that force is employed. Since I shall have more than once to quote this philosopher and great master of dynamical science, I may here notice how thoroughly conformable the views of Faraday became to those of Leibnitz towards the close of his great electrical discoveries, and this apparently without in any way deriving them from the fountain head. This is the more interesting since Leibnitz appealed to the future of experiment to justify him in the eyes of posterity for what he felt to be assailable in his abstract conclusions. Like that author, Faraday seems to have refused assent to the existence of atoms, to have reduced the notion of passivity to one of resistance. He no longer believed in the impenetrability of matter, and gave his entire attention to force. Atmospheres of force and centres of action, which might be presumed to coalesce, and which were scarce other than mathematical points, or of metaphysical existence, became the sole objects of his consideration. In force alone he seemed to look for the essence of bodies, their primitive constitution and substantial forms, just as had been insisted on by Leibnitz. In this he was not at variance with Aristotle, while in the imperfection and

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transitoriness which he attributed to matter, he was following in the wake of Plato.

Note 4.—The sun, the moon, and all the stars, are not affected by the contagion (contingencies) of the elemental qualities. The source of heat up above was held to be the motion of the spheres, and there was besides a sphere of fire which was neighbouring on that of the moon. Alone of all the elements fire has no place here below. The place of fire *quoad* fire was upward. It was fit that it should have a place, and not always subsist in becoming to be εν τω γιγνεσθαι. Aristotle, in his first book of meteor and second of the heavens, describes the sun as a source of heat, as being the most solid and dense, as well as the most clear and swift, of all the planets. Some indeed do pretend that the heat of the sun is formal and not virtual. An idea much accepted in the middle ages was that the heat up above was generated by the movement of the firmament in turning from east to west, this being the diurnal motion, the reverse of that in which the planets move. This movement of the firmament or primum mobile carries with it all underneath by a force of motion called *raptus* or violence. It is the last or ultimate heaven, which encloses all the spheres, and beyond it there is nothing at all; that is, in a material sense, for God was presumed to be there; indeed, more heat, or at least more "perfection" was thought to lie at the "edge of the wheel;" from this atmosphere of force all natural power was "showered down." See Dante, 'Paradiso,' *Canto* xxvii, "*La natura del moto, etc.*" There is beauty in these conceptions of the universe, though falling far short of what now is gathered in every street and enjoyed by every clown. Nature shut up in

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a box is abhorrent to modern ideas; a thing the heterogenists at least would be the last to endure. So, too, in all this grinding movement there is no conclusion for the philosopher. Movement is a successive thing, and consequently it has no existence in a philosophical sense, any more than has time, because its parts do not coexist or happen at one moment of time; but force does exist all together and at once, and therefore it is something true and real. Force always exists. In a letter to the R. P. des Bosses this is how Leibnitz has dealt with this subject. "If we admit," he says, "with the Cartesians, a *plenum* and uniformity in matter, and besides only gift it with movement, there could be only a substitution of equivalents in things, all the whole world reduced to the perfectly uniform movement of a wheel upon its axis, or the evolution of concentric circles in a perfectly similar way, so that not even an angel could distinguish the state or condition of one moment from that of another moment. Farewell to all variety in phenomena. That is why beside figure, size, and movement, it is necessary to bring in 'forms' whence there proceeds in matter that so great distinction of appearances, and I do not really see where you get these forms, so to say, to be intelligible, except the *entelechiæ*." I do not scruple to quote from the Hanoverian philosopher, as the great link between the old and new philosophy. When we contemplate Faraday operating by means of electricity on sphere contained within sphere, with more or less of insulation and resistance between them, seeking thus to determine the nature and relations of force, we cannot but be reminded of the spherical cosmogony of the ancients, and the views they entertained about force.

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Page 246, Note 1.—No movement can occur without production of heat. Here we find ourselves on the confines of the science or branch of science now recently installed as conversion of force. To this the old physicians were not altogether strangers, of which many proofs be given, but here let one suffice, viz. the action of cold medicines as explained by the Galenic school, which medicines, received from without into the frame, were by our heat divided, rarefied, and evaporated, and so became cooling agents. The doctrine of conversion of force forms the heart of the dispute between Leibnitz and the Cartesians. According to Descartes, there is always the same amount of movement in the world. This Leibnitz denies, but says there is always the same amount of force. Let this much be said without depreciation of Mayer of Heilbrom, a member of our profession, to whom all honour is due, as well as to Grove, Tyndal, Joule, and the rest who have broken ground in this line. According to the ancient philosophers, "all natural things had within them the principle of motion and of rest." This was the commonest proposition, as if one should say that natural things were composed of matter and form; and such argument comprised all things whatever, except the original matter and the primary motor. It is, then, not so surprising that we find our author delivering himself in this sort—that "movement is not hot *per se*, but a cause of heat that it is." We find the same kind of expression in contemporary writers, which they derived from the great watersheds of philosophy. Benedetto Varchi expresses himself thus:—"Saint Thomas (Thomas Aquinas) and Averrhoes seem to say that motion heats of itself, and not accidentally, as may be seen in the second book of Heaven and the text of the Commentary XLII." Another

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contemporary of our author, the Neopolitan poet Sannazzaro, in his well-known work the Arcadia, expresses himself as follows:—"If we rub together perseveringly either laurel or ivy wood we may drive fire out of them." He says that fire is generated by local movement through rarefaction and disintegration of the air when it snaps or breaks, as with flint and steel; and when darts and arrows are driven swiftly through the atmosphere, if barbed or pointed with lead, the point will often bear signs of being melted. These are ideas of the same order as those brought into prominence by Count Rumford at the beginning of the present century. Of modern medical writers I may mention M. Marey as giving importance to motion as a cause of heat in the human body.

Note 2.—"By its presence it occasions movements in the body." The ancients seem to have been agreed that the soul is active. The scholastic teaching, in a general view, was that a reciprocal action is exerted between the body and soul; but how can ideas in the soul or modes of the soul occasion changes in the organism? and, again, how can movements in the body introduce ideas into the soul? A thing that has dimension without thought, can it act on another substance that has thought without dimension? The Cartesians brought in God for all these acts, having first persuaded themselves that soul and body are passive. This would be like a clockmaker with two bad clocks of his workmanship, always trying to keep them in true time and correcting one by the other. A double duty for a single end. Is there a physico-natural law concerned without the intervention of God? Some have called the soul a spiritual automaton. Does God undertake to give movement to one body (the organism) because of move-

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ment in another body (the soul). Movement must begin somewhere according to the law in metaphysics, *repugnat in causis processus ad infinitum.* It needs must be that the soul is active, for indeed what best serves to distinguish the same from mere brute matter is no other than active force; in a metaphysical argument action can never be a modification of matter; extension and impenetrability (*antitypia*) are altogether in their nature passive, and movement and thought must derive from something else. That which is passive, geometric, and material can never suggest those principles of the mechanism which result in laws of motion, nor indeed can the first be proved mathematically. Is there not then a pre-established harmony? God in making the world must have ordained that such and such movements should correspond in series to the ideas of the soul, and *vice versâ.* The clocks are good clocks, and made to wear well, and so contrived in the beginning as to correspond throughout. An inviolable harmony is secured. The first movement in a creature is certainly as difficult a conception as is the act of creation by God. But if we are aware in ourselves of something that determines movement by its action, how can we deny to other substances somewhat of the same character which governs them?

Page 247, Note 1. — Blood extraordinarily choice. The blood of the Vena Cava, according to Spigelius, is more pure and sincere than the thick blood of the Porta. This is what we read of in the celebrated passage of Dante, 'Purg.', cant. xxv, as perfect blood, which is not drunk up immediately by the thirsty veins, but which remains over and above, as from a plenteous feast. It is the prime and superabundance of the body when the vul-

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garest uses have been provided for; it serves for generation and noblest purposes, and also to nourish the heart, which is more compact and more curious than any other organ, and especially its left side hath need of it; for that is the chamber for the spirit.

Note 2.—This spirit. The more ordinary idea of the spirit is something that escapes from the blood in the act of coagulation, a thin light vapour formed out of the best of the blood; though, according to Galen, air takes a large share in its formation, that air which we take in by the breath, and according to him the substance or flesh of the lung serves to no other end than to prepare the air of which is formed the spirit. Such is the gloss of Galen which Varchi gives, who also tells us that Albertus Magnus insisted that the spirit was derived in part from the food which we eat. It is called vital spirit, as distinguished from the animal, which is in the brain; and Galen places the lung under control of the animal spirit. This vital spirit or force is in man more perfect than in animals, and it is the instrument of his intellect. Galen describes it as hot, but Avicenna speaks of it as moist and sometimes hot, or it may be cold or temperate. It has been a moot question whether the spirit has an anima. Galen, indeed, sometimes seems to say that it is animate, but the decision of philosophers seems rather the other way. True it moves from place to place, or rather it is moved by the soul, or by that which has an *anima* or soul; it moves not by intrinsic virtue—that is, not by its own nature and inherent strength, but by a quality that is extrinsically imparted to the spirit by the soul spreading through all the members. There is, indeed, no proof of *anima* in the spirit; "iron and bile are moved, the first by

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the magnet, the second by rhubarb; but who ever thought that either of them had an anima." This boasted proof, then, has no weight. According to Aristotle and his great commentator Averrhoes, neither the blood, nor the seed, nor the spirit, possess an *anima*. "The spirit neither feeds, nor feels, nor has it understanding." It is, indeed, a simple body, but some say composed of the four elements. "It turns to water when we die." We see, then, that it is a material conception which many entertained of this spirit. Some called it *vinculum*. It was a necessary habitation for the soul, and that is why Villalobos says that the body was made for it, and that it is the chief subject of the soul, and it is also the subject of the animal heat. Galen thinks the air we draw in becomes spirit (oxygen?) and so is turned to natural heat, as seen in his book on the uses of the respiration, which differs somewhat from the teaching of Aristotle.

Page 248, Note 1.—Hunter rejected the circulation of the blood as cause of natural heat. He placed it in an imaginary power, independent of circulation, sensation, and will. We may find this in his first observation on the increased heat of inflamed parts. Crawford's theory was based on certain crude ideas of chemical change. Brodie would have attributed it to nervous power, a view which Drs. Dalton and John Davy strongly opposed. The discovery of the correlation of physical forces has made a new epoch in the explanations of natural heat. The study of their qualitative appreciation is now in full tide.

Page 249, Note 1.—Suppose in such a place a fire burning? Galen says if in a living animal you lay your finger in the left sinus of the heart you will feel most

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vehement heat. Modern experiments by Malgaigne and Claude Bernard seem to prove that the blood in the right cavity of the heart is hotter than in the left. This leaves room for the idea that respiration is a refrigerative process, and also that yellow bile might be the hottest thing in the organism according to the dictum of Galen.

Page 250, Note 1.—Secondary acts. As we have said, the precedence, or first rank in order of time, is given to the entelechia, ἐχων το ἐντελης having the perfecting, it is nothing more than the force or activity, the state or condition in which action ensues, of course unless some impediment intervene or happen to mar it. This is primary act. God himself is the primary motor, the spring of all things living; he is also called pure act, for evil in its nature is privative, the act of God is positive. Leibnitz, among the moderns, has stood up boldly for the entelechia; it is, he says, the sole characteristic of substance. The Cartesians taught the impenetrability of matter, with its complete and essential passivity, a doctrine which culminated in the errors of Spinoza. Leibnitz declared the contrary, viz. that matter is essentially active, that every substance is force, and that every force or simple being contains in itself the principle of all its changes.

The necessity there is of a better knowledge of these views in the present day makes me inclined to risk here a longer exposition of a doctrine which hath so much need to be referred to its original source. Leibnitz has expressed himself thus: "To get a clear notion of substance we must revert to that we have of force or energy, and to explain this is the business of a particular science which we name dynamical science. Active or acting force is

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not the naked potentia of the schools; we are not to look at it as the scholastics were apt to do, as a simple faculty or possibility of acting (quiddity), which in order to be effectuated or reduced to act, stands in need of excitation from without—some foreign stimulus, in short. The veritable active force contains within itself the action; 'tis the entelechia, a power intermediate or half way between the faculty of acting and the act effectuated or performed. This energy both contains and develops the effort *conatum evolvit*, and it is carried onwards towards action without its requiring any exterior provocation. The energy or living force may be well seen in a weight which is suspended by a cord, and which drags upon the cord; but however you may attempt to explain mechanically either gravity or the tension of a spring; the *ultima ratio* of movement in matter will never be *anything else than the force impressed on all beings at their creation*, limited in each by the opposition and contrary direction of others than themselves. I say this inherent force (*virtus agendi*) is inherent in every substance and at every moment it is in operation. That is equally true of corporeal and also of spiritual things. Here then is the capital error of those who place the essence of matter in extension and impenetrability, imagining that it is possible for bodies to exist in absolute repose; we will show that no substance can receive from another substance not so much even as the faculty of acting, and that externally its effort or force pre-existing in it can only encounter limits that serve to arrest, control, or determine it."

Page 251, Note 1.—"Converted into fire." The explanation seems to be that it would flare up and go out from want of radical moisture. As I find it elsewhere

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described, by joy the spirit and blood is ravished suddenly from the heart into the members, when death ensues from the fountain of life and heat being exhausted.

Page 252, Note 1.—Actual heat is generally opposed to the potential, as is declared in the actual and potential cauteries. I know not, however, if this instance is the happiest that could be chosen. Actual heat is described in medical works as that which acts *primo occursu*, and the examples which are commonly given of it are must and old wine. Here it is opposed to complexional heat, or, at least, to that heat which is native to the individual, and by which the individual is preserved. It cannot destroy the possessor, because no quality can destroy its subject, and, therefore, no creature can be destroyed by its natural heat.

Note 2.—"As to the complexional quality he would say far different." We have now arrived at a part that presents some difficulties, especially to the modern reader, who is clogged with ideas of latent heat, sensible heat, &c. In the first place, he must know that great weight was allowed to the evidence of the senses among physicians, and even among philosophers; these thought it no shame to work by the senses; Varchi calls them *artefici sensitivi*. There was no such perfection of instruments in those days as now. The Arabs knew the great importance of temperature measures, and for this they employed the areometer; it does not appear however that the mercurial thermometer was used by them; but the touch which, as Pliny affirms, was chief among the senses, must still have remained the great criterion. It is not so wonderful, then, that we read of the viper as a warm or warm-blooded animal. This is really not the case according to our

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present views. Warm-blooded animals vary but little in their temperature; it is otherwise, however, with the class of reptiles, which are essentially animals of variable temperature, and among these the viper, as determined by modern observation, is very remarkable for the high range its temperature occasionally attains. In the days of Villalobos all creatures, just the same as medicines, were grouped into four classes, according to a fanciful scale of complexional heat. Thus, an animal might be of the first, second, third, or fourth degree of heat; and the viper, which got very hot in the sun, and possibly also when provoked, with a heat which was appreciable to the finger, was considered to be complexionally of the highest or fourth degree of heat. This, then, went directly to the experiment of Galen. Suppose the finger does feel vehement heat when placed in the left chamber of the heart or even on the body of the viper, yet, being of the quality of native heat, the creature or organ is rather preserved by it than offended. The viper basks in the sun and enjoys it, but never does he burst into flame; no more does the spirit in the heart. So, too, fire consumes not itself; fire, indeed, consumes anything but itself. What we see in it is the brand or coal burning, on which it lives and preys; so that it is not the complexional heat of the spirit, but the actual heat that is renewed in the air by continual motion that might require to be cooled, which air serves it as food or pabulum. I offer this explanation with some diffidence; it is the best that now occurs to me. It runs in the same vein as the views of Barthez.

Page 255, Note 1.—Green diet. According to the Arabs, besides the four humours, there were other four secondary humours, for the first of which they did not

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find a name; they imagined it to distil in little drops from the terminations of the veins; the next, in order of grossness, they called Dew; the third Cadmium, the fourth Gluten (see works of A. Paré). Digestion is certainly a wonderful process, but not more wonderful, says Varchi, than what we see with air; when "overpowered by water it turns to water, when by fire it turns to fire." Here we would seem to have an anticipation of hydrogen and oxygen. The elements are mortal within certain bounds at least, corrupting and generating one another continually, as "from water there is made fire, and fire may become water, and earth sea, and air fire; but fire has more perfect love; all of them possess more love than hate. When nature and complexion reach their height then man (in Arabic mineral) is made.

Page 257, Note 1.—"So close and suffocating a place." The problem of respiration in the fœtus is still *sub judice*. Some have decided that the vessels in secundines and placenta perform the office of true gills, or branchiæ. The amniotic fluid has been accused of lending itself to the office of respiration. One can only say that the ultimate division of blood-vessels seems a chief feature in the process of respiration.

Page 259, Note 1.—The expulsive virtue. Attention to natural facts must have given strong support to the existence of this *potentia*. With what confidence, indeed, does the surgeon not expect the extrusion of a needle that has been driven into the soft parts; it may be there for weeks or months, and yet in the end it is sure to appear in a manner truly marvellous.

Page 260, Note 1.—"Why the doctors call it celestial."

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The soul of man is immortal and eternal, and some have even said that any impression on it is more or less in its nature imperishable, but with the forms of the elements, and the vegetative and sensitive animæ which are the forms of living creatures, it is not so. In their nature they may properly be called celestial because they owe their formative or informing virtue to the stars, the heavenly intelligences, the sacred lights, as Dante calls them :

L'anima d'ogni bruto e delle piante
Di complession potenziata tira
Lo raggio e 'l moto delle luci sante.

PARADISO, canto vii.

Such was doctrine of the middle ages; and according to it the animal heat might be called celestial. May we be allowed here an illustration from Varchi? He says of the ripening of the grapes, the sun does not mature them mediately but immediately, begetting in them certain corpuscula which gradually combine the moist and dry, and so they ripen. If you take the grapes and make wine of them, it boils because these little corpuscles come together and unite, but the heat of the fire could never mature the grapes, because it does not generate these corpuscles. So the work of human generation, according to Aristotle, is effected by the sun rather than human organs. The reasoning which bestows a soul on every substance in nature only appears singular to us because we live under the dominion of another phraseology. We are not careful to observe when we get our conception of nature, soul, force. In his principles of philosophy, *Monadologie*, and his work on nature and grace, Leibnitz describes these things in a way that

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may very well claim the assent of modern philosophers. "I uphold," he says, "with most of the ancients, that nature abounds in force, and in life, and in souls. There are really more souls than grains of sand." According to Leibnitz, every creature is pregnant with its future condition. Brute animals are not machines, they are forces. "Would you know perfectly," he says, "how all substances are constituted, what are the immanent (intrinsic) actions of substances which make them what they are, you must refer yourself to the human soul. No man believes otherwise than that he contains within himself a spontaneity. If you attribute to the soul an inherent force that allows it to produce immanent actions, or, what is the same thing, allows it to act in an immanent manner, all difficulty from that moment ceases; for further it will be logical to allow that some such soul is inherent in other forms or natures or substances, if you like to call them so," etc. See 'Philosophie de Leibnitz, par Nourrisson,' pp. 218, 219.

But philosophers of the days of Villalobos were not content to attribute to the heavenly orbs such a nature or anima as is above described; on these intelligences they bestowed a living soul corresponding to the soul of man, which was capable of assisting their movement, "as a sailor guides a ship;" and just like the human soul, the stars were not affected by the contagion of elemental qualities. The human soul alone can pretend to such a constitution, and the animal heat, which is all one with the soul, is on that account termed celestial: but is it all one with the soul? In one sense it is, just as a river keeps its form, although it has different affluents and varies ever in the nature of its stream, so is it with the aerial tide which we convert to our use; but Galen seems to have objected that the

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inflowing heat was not really the spirit, and Villalobos seems to think so too, and yet in another place he suggests the contrary. The blood, the vapour, the aerial spirit in the folds of the limbs, all shared in this celestial character, since it needed but little mutation to make of one the other. The aerial vapour needed but little to make it perfect spirit; the blood was further off, and required somewhat more change.

Page 263, Note 1.—Once again Forms. The shapes and combinations found in nature and science. The things that really are, the τὰ ὄντως ὄντα of Plato. The forms that nature is seen in, and to which she is wedded or inclined. The mind reverts irresistibly to the *cadre* of chemical science, and the vast array of definite products it encloses; the substitution series in organic compounds, and all that comes of fermentative change; nor need our view be narrowed to these.

Page 264, Note 1.—"Veins we call the meseraical." According to the text of Spigelius, "The mesenteric or right branch of the gate vein is joined to the mesentery as soon as it comes to the back, and is divided into two chief branches through the mesentery between its two coats, which are each of them cleft into a number of smaller branches, and they again into less twigs, which going to the guts make up those veins so famous among Physitians that are called the Miseraick veins."

Page 265, Note 1.—"Without drawing anything from the veins." This is worthy of notice as a process of imbibition which has been recently discussed, having been brought forward with some clever experiments by Dr. Bence Jones, a process to which we have been blinded by

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the too exclusive attention given to the blood mass in its circle. No doubt many medicines as well as food follow this immediate track of admission to the economy—cod-liver oil for instance. It seems to take account of the lymphatics and those *vacuoli* which are now generally recognised as of terminating them. It is as well to say that authors of the date of Villalobos recognised the identity of blood in the higher organisms with the transparent juices found in the lower animals. This account of digestion has also some bearing on the origin of tertian fever, agues, cholera, &c., through the primæ viæ.

I have finished these annotations in the same spirit in which they were begun, viz. that of sustaining modern science by corroboration from previous testimony. There will be found no attempt at a system, and, indeed, I have failed to find completeness in the views of the author; such an attempt might also lead to the suspicion that I was subjugated to these views, whereas I have simply undertaken the task of partially illustrating them. In this, as I have followed the example, I cannot do better than quote the words of the excellent Leibnitz :—"To bring forth traces of truth such as are found among the ancients, or, better, among those who have gone before us, is truly to get gold out of the earth, the diamond out of the mire, to bring light out of darkness; it is, indeed, a *perennis quædam philosophia*."

THE END.

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ERRATA.

Page 4, line 4, *for* for task, *read* for the task.
Page 61, line 6, *for* all another, *read* another all.
Page, 82, line 33, *for* the first writer, *read* the first compendious writer.
Page 92, line 7, *for* commented, *read* commentated.
Page 199, line 9, *for* that much, *read* that was much.

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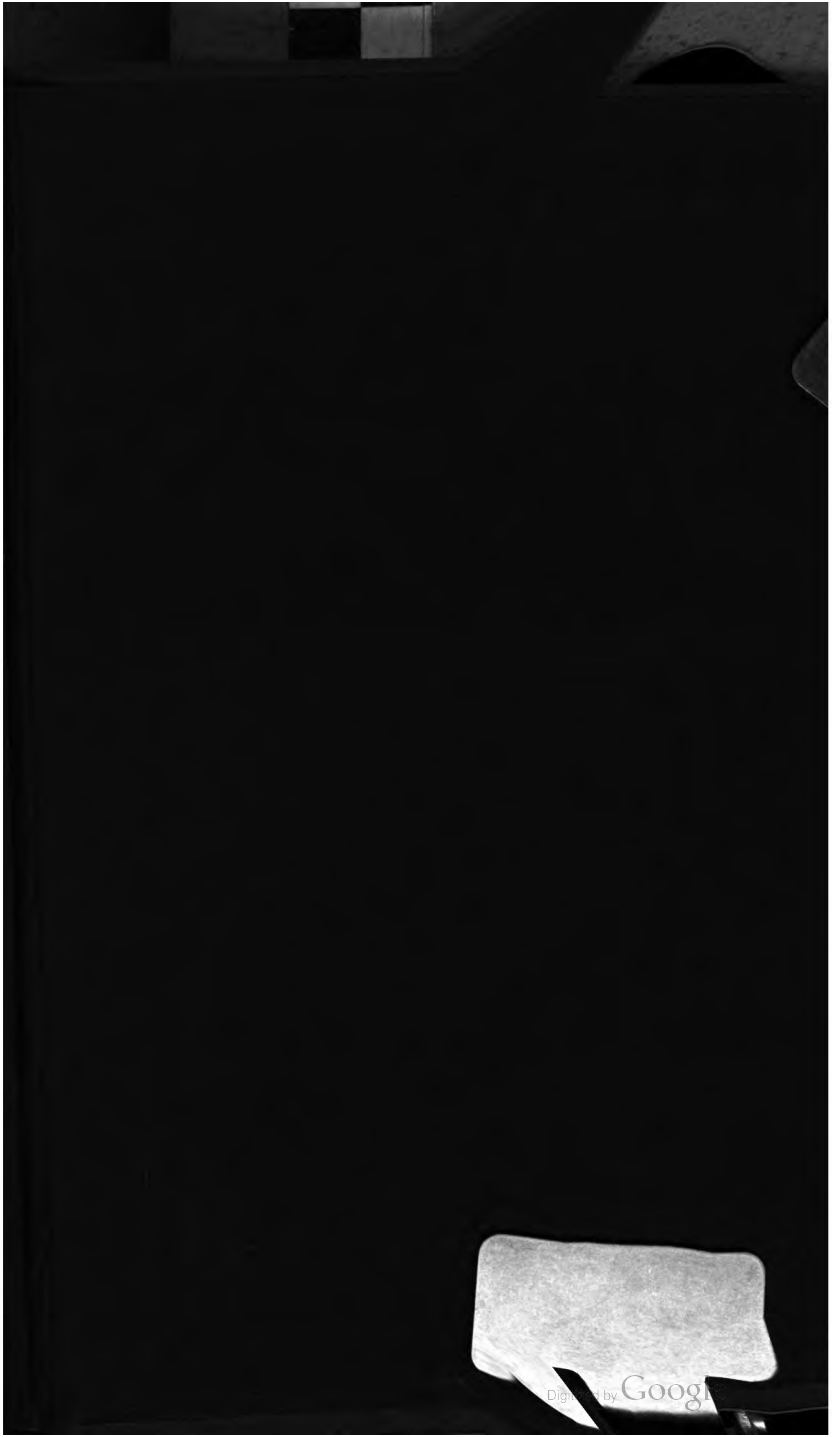
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